

**UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT**

STATE OF UTAH, on behalf of the Utah
Department of Environmental Quality,
Division of Air Quality,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, and GINA
MCCARTHY, Administrator of the United
States Environmental Protection Agency,

Respondents.

Case No. 16-9541

PACIFICORP,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, and GINA
MCCARTHY, Administrator of the United
States Environmental Protection Agency,

Respondents.

Case No. 16-9542

UTAH ASSOCIATED MUNICIPAL
POWER SYSTEM,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, and GINA
MCCARTHY, Administrator of the United
States Environmental Protection Agency,

Respondents.

Case No. 16-9543

DESERET GENERATION &
TRANSMISSION CO-OPERATIVE,

Petitioner,

v.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY, and GINA
MCCARTHY, Administrator of the United
States Environmental Protection Agency,

Respondents.

HEAL UTAH, NATIONAL PARKS
CONSERVATION ASSOCIATION,
SIERRA CLUB, and UTAH PHYSICIANS
FOR A HEALTHY ENVIRONMENT

Respondent-Intervenors.

CARBON COUNTY, UTAH, and EMERY
COUNTY, UTAH

Petitioner-Intervenors.

Case No. 16-9545

EMERY COUNTY AND CARBON COUNTY'S MOTION FOR STAY

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GLOSSARY OF ACRONYMS

BART	Best Available Retrofit Technology
CAA	Clean Air Act
EPA	Environmental Protection Agency
FIP	Federal Implementation Plan
RHR	Regional Haze Rule
SCR	Selective Catalytic Reduction
SIP	State Implementation Plan

Pursuant to Rule 18 of the Federal Rules of Appellate Procedure, Emery County and Carbon County (collectively, the “Counties”) respectfully submit this Motion for Stay of EPA’s July 5, 2016 Final Rule (“Final Rule”) while the Rule is under review, or in the alternative, Brief in Support of the Motions for Stay filed by the State of Utah and PacifiCorp.

INTRODUCTION

The Hunter and Huntington power plants (the “Plants”) are located in Emery County, and the Skyline and Dugout coal mines which provide coal to the Plants are located in Carbon County. The costly selective catalytic reduction (“SCR”) requirements of EPA’s Final Rule threaten to fracture the Counties’ economic backbone—the coal-mining and utility industries. These industries provide hundreds of jobs, support dozens of businesses, and provide a significant portion of the otherwise limited tax base for these Counties. Compliance costs associated with the federal implementation plan (“FIP”) are astronomical—\$700 million for an improvement in visibility that would be imperceptible to the human eye. For the Counties, the price tag is even higher and threatens their economic stability. If a stay is not granted and this Court eventually vacates the challenged provisions of the Final Rule, the Counties will not be able to recover their economic damages resulting during the appeal. As a result, the Counties seek a stay to avoid unnecessary economic disruption that will necessarily result if the owners of the

Plants (the “Owners”) are required to move forward with the FIP during the appeal.

STATEMENT OF JURISDICTION

This Court has jurisdiction to review EPA’s decision on the Final Rule under 42 U.S.C. § 7607(b)(1), and authority to grant a stay under 5 U.S.C. § 705.

BACKGROUND

The Counties adopt the background presented by PacifiCorp and the State of Utah.

STANDARD OF REVIEW

The Tenth Circuit uses the same standard for deciding motions to stay agency actions as deciding preliminary injunctions. 10th Cir. R. 8.1, 18.1; *see Associated Sec. Corp. v. SEC*, 283 F.2d 773, 774-75 (10th Cir. 1960). A party seeking to stay agency actions must establish (1) the likelihood of success on the merits; (2) the threat of irreparable harm if the stay is not granted; (3) the absence of harm to opposing parties if the stay is granted; and (4) that a stay is in the public interest. 10th Cir. R. 8.1. The Counties will address their unique irreparable harm, merits, absence of harm to others, and public interest arguments, and also adopt the arguments made by the other movants.

ARGUMENT

I. There Is a Threat of Irreparable Harm if a Stay Is Not Granted.

The irreparable harm requirement is met if the movant can demonstrate “‘a significant risk that he or she will experience harm that cannot be compensated after the fact by monetary damages.’” RoDa Drilling Co. v. Siegal, 552 F.3d 1203, 1210 (10th Cir. 2009) (citation omitted). Although financial harm alone may be insufficient in some circumstances, it does constitute irreparable harm “‘where no ‘adequate compensatory or other corrective relief will be available at a later date, in the ordinary course of litigation.’” Mexichem Specialty Resins, Inc. v. EPA, 787 F.3d 544, 555 (D.C. Cir. 2015) (citation omitted); Crowe & Dunlevy, P.C. v. Stidham, 640 F.3d 1140, 1157 (10th Cir. 2011) (“‘imposition of money damages that cannot later be recovered for reasons such as sovereign immunity constitutes irreparable injury’” (brackets and citation omitted)). Particularly applicable here, “‘unemployment and the permanent closure of [power] plants” have also been deemed to constitute irreparable harms, as recently held by the Fifth Circuit in staying the implementation of a FIP in Texas. Texas v. EPA, 829 F.3d 405, 434–35 (5th Cir. 2016).

As explained by the State of Utah and PacifiCorp, the Final Rule’s compliance deadlines do not allow the Owners to delay implementation pending a final decision from this Court. Utah brief at 9-10; PacifiCorp brief at 20-21. As a

result, if the Final Rule is not stayed, the Owners will be required to move forward with the costly FIP, including \$2,200,000 in costs by the end of 2017, and a “significant ramp up in costs” after 2017. PacifiCorp brief at 20. Alternatively, and more likely, the cost-prohibitive FIP will force the Owners to begin to consider the shutdown of the Plants, as EPA has seen on several occasions,¹ or possibly convert them to natural gas plants. Under either scenario, the Counties would be irreparably harmed as unemployment and other economic disruption would ensue, and money damages would be barred by sovereign immunity.

The Counties have both been designated as “Mining Dependent” by the U.S. Department of Agriculture.² The Counties are home to six of the State’s seven coal mines.³ Not surprisingly, coal mining and related coal-fired utility jobs represent a significant percentage of the jobs in the Counties, approximately 30%

¹ For example, units at the Apache and Cholla plants in Arizona, San Juan plant in New Mexico, Boardman plant in Oregon, and Craig plant in Colorado, have been shut down or converted rather than retrofitted with prohibitively expensive SCR. *See*, Apache Plant, 80 Fed. Reg. 19220 (Feb. 27, 2015); Cholla Plant, 81 Fed. Reg. 46852 (July 19, 2016); Boardman Plant, 76 Fed. Reg. 38997 (July 5, 2011). In addition, PacifiCorp’s Carbon plant was shut down due to the mercury rule and as part of the BAR Alternative.

² USDA, Economic Research Service, County Typology Codes (2015), <http://www.ers.usda.gov/data-products/county-typology-codes.aspx>.

³ South Eastern Utah Economic Development District, Workforce Study (“SEUDD Workforce Study”) at 6 (Mar. 2016) (Exhibit A).

in Emery County.⁴ As a result, the Counties have already been impacted by the recent decline in the coal industry, including the recent closure of the Deer Creek mine in Emery County and the Horizon mine in Carbon County. Over the past three years, employment in coal mining in Carbon County has decreased by 21%, and in Emery County by a staggering 36%.⁵ In addition, the closure of the Carbon power plant (in Carbon County) in 2015 resulted in a direct loss of 70 jobs and indirect loss of up to 300 jobs.⁶ Unemployment rates in the Counties for 2016 are already almost double the statewide average.⁷

In the likely event that the Plants will be pushed into early closure as a result of the costly FIP requirements, the Counties would be severely harmed. Job losses at the two Plants alone would exceed 370 employees or approximately \$35 million

⁴ *Id.* at 17.

⁵ *Id.* at 4.

⁶ Amy Joi O'Donoghue, *End of an era: Mercury rule shutter Utah's oldest power plant*, Deseret News (Apr. 14, 2015), <http://www.deseretnews.com/article/865626442/End-of-an-era-Mercury-rule-shutters-Utahs-oldest-power-plant.html?pg=all>; EPA Response to Comments ("RTC") at 377 (Exhibit B).

⁷ Average unemployment rate for all of Utah for 2016 through September was 3.3%. For Carbon and Emery Counties, it was 6.4% and 6.8% respectively. Utah Department of Workforce Services, Employment and Unemployment Labor Force Data, <http://jobs.utah.gov/jsp/wi/utalmis/countyareas.do?seasadj=0&d2384982-o=2&item=lf&d-2384982-s=0&d-2384982-p=1&periodyear=2016> (last visited Oct. 31, 2016).

in wages.⁸ Additional indirect job losses would also be expected in the many sub-industries that supply, service, and support the plants, including local equipment vendors, transportation providers, engineers, contractors, consultants, etc., estimated at another 300+ jobs or another \$25 million in wages.⁹ One Emery County commissioner estimates the economic impact could be double this—800+ jobs in Emery County alone.¹⁰ Additional job losses would also be likely in the local coal mining industry as the coal for the closed or converted plants would no longer be needed.¹¹ When Congress designed the CAA, it was particularly concerned about such irreparable employment harm, and emphasized that the impact of such implementation plans on the “potential loss or shifts of employment” matter. 42 U.S.C. § 7621(a).

⁸ Estimate based on PacifiCorp projections and average monthly wage in utilities sector for Emery County for third quarter 2015. SEUDD Workforce Study at 24-25.

⁹ Estimate based on PacifiCorp projections and the mean of the average monthly wage for mining and utilities jobs for the Counties for third quarter 2015. *Id.*

¹⁰ Patsy Stoddard, *Part I: Commissioner Brady speaks at EPA hearing on regional haze*, Emery County Progress (Feb. 2, 2016), http://ecprogress.com/index.php?tier=1&article_id=18488 (“The economic impact of the Hunter and Huntington Power Plants is a large portion of our economy in Emery County. The economic impact Rocky Mountain Power has had to Emery County in direct and indirect is 800+ jobs.”).

¹¹ The Dugout and Skyline mines provide approximately 2,000 direct and indirect jobs, which jobs provide average annual pay and benefits of approximately \$110,000.

The loss of more than \$60 million of employment income for the Counties' residents would undoubtedly also have a significant and incremental trickle-down impact on all sectors of the Counties' economies, and notably a significant impact on the Counties' own property, sales, and other tax, fee, and license revenues.¹² In addition, the continued job losses and the uncertainty created by the FIP are detrimentally impacting the Counties by making it difficult to expand or attract businesses, in particular businesses in the mining or utility industries.¹³

Even if the plants were able to avoid early closure, the estimated \$700 million to implement the FIP would likely be passed along to ratepayers, including the Counties' residents. By EPA's own estimates, implementation of the FIP will result in 5-10% rate increases.¹⁴ While mining and utility jobs pay higher than average wages, the remaining residents of the Counties are not so fortunate. Excluding mining and utility jobs, the remaining 70% of Emery County residents' average monthly wage is \$2,413, and the remaining 86% of Carbon County

¹² The plants provide a significant portion of the tax base for Emery County, contributing approximately \$7.9 million annually in property taxes. See Chad Teply Decl. at 4.

¹³ SEUDD Workforce Study at 31-35 ("mines have closed and a moratorium has been placed on renewing coal leases, resulting in significant decreases in employment... companies wishing to expand are presently required to postpone any plans of growth....").

¹⁴ See EPA RTC at 370.

residents' average monthly wage is \$2,374¹⁵—both more than \$1,000 less than the statewide average of \$3,539.¹⁶ Of these non-mining and non-utility workers, many earn less than minimum wage (\$1,256 per month).¹⁷ These wage statistics show that the anticipated rate increases will cause significant harm to the already burdened residents. Business ratepayers will be similarly harmed, unless they can pass those increases along to consumers—many of whom are residents of the Counties, creating even further harm. Such rate increase caused by EPA-mandated controls was one of several factors justifying the recent stay of a Regional Haze FIP in Texas. *Texas v. EPA*, 829 F.3d at 433.

In short, irrespective of the course of action the Owners follow if a stay is not granted, the Counties' residents and businesses, and its own tax revenues, will suffer irreparable harm.

¹⁵ SEUEDD Workforce Study at 17-18, 24-25.

¹⁶ Department of Workforce Services, Employment and Wage Statistics, Utah Statewide, 3rd Quarter 2015, <https://jobs.utah.gov/jsp/wi/utalmis/industrydetail.do> (last visited Nov. 1, 2016).

¹⁷ In Emery County 19% of the non-mining and non-utility industry wage earners earn less than minimum wage, and in Carbon County, it is 15.5%. SEUEDD Workforce Study at 17-18, 24-25.

II. Petitioners Are Likely to Succeed on the Merits Because EPA Failed to Properly Consider Economic and Employment Impacts as Required by the Statutory BART Factors.

To demonstrate likelihood of success on the merits, a movant need only present a “‘prima facie case,’” not a “‘certainty of winning.’” Planned Parenthood Ass’n of Utah v. Herbert, 828 F.3d 1245, 1252 (10th Cir. 2016) (citation omitted).

The Counties satisfy this standard because EPA failed to consider economic disruption and unemployment in its Final Rule, including the EPA’s BART determinations. EPA’s failure was arbitrary and capricious, an abuse of discretion, and not in accordance with the law.

In making a BART determination, the CAA requires the consideration of various specified factors, including the “energy and the nonair quality environmental impacts of compliance” 42 U.S.C. § 7491(g)(2). In considering energy impacts, the EPA’s own BART Guidelines provide for the consideration of any “economic disruption or unemployment.” 40 C.F.R. pt. 51, app. Y, § IV.D.4.h.5.¹⁸

When promulgating a FIP, EPA stands in the shoes of the State, and must meet the same requirements. *See* 77 Fed. Reg. 40,150, 40,164 (July 6, 2012). EPA

¹⁸ The Guidelines also contemplate in these circumstances the conduct of “an economic analysis that demonstrates, in sufficient detail for public review, the specific economic effects, parameters, and reasoning” for a BART selection. 40 C.F.R. pt. 51, app. Y, § IV.E.3.2.

was required to conduct the necessary analyses and consider the relevant information set forth in the CAA and the BART Guidelines. “Just as the State was required to properly consider each statutory factor in the BART analysis in the implementation of its SIP, so too was EPA in the promulgation of its FIP.” North Dakota v. EPA, 730 F.3d 750, 764 (8th Cir. 2013).

Despite the requirements calling for the consideration of economic disruption and unemployment, EPA failed to do so. EPA was repeatedly made aware of these deficiencies during the comment period.¹⁹

¹⁹ See, e.g., PacifiCorp Comments, EPA-R08-OAR-2015-0463-0169, at 41, Mar. 3, 2016 (“When considering the FIP Proposal, EPA must include in its evaluation of energy impacts and their associated costs the impacts to local jobs and state and local economies surrounding the affected facilities. With retirement, replacement, or natural gas conversion of individual units a potential outcome due to EPA’s FIP Proposal, EPA’s assessment must include coordination with state regulators, environmental agencies and elected officials.”); County Commissioner Comments, EPA-R08-OAR-2015-0463-0063 (“The economic impact of the Hunter and Huntington Power Plants is a large portion of our economy in Emery County. The economic impact Rocky Mountain Power has had to Emery County in direct and indirect is 800+ jobs.”); Carbon County Board of Commissioners Comment, Mar. 10, 2016 (“Carbon County is most concerned that, based on testimony from the Navajo tribe with a population of 166,826 how the loss of nearly 1,000 jobs between the plant and the mine would be too great of an impact to the tribe. Yet the loss of 1,260 direct and 1,850 indirect jobs between the mines and power plants and our supporting businesses in the Carbon/Emery County area with a combined population of 31,737 somehow does not measure up to the a major economic impact to the area and our citizens? Why has no testimony been taken on the impacts to our area?”); Public Lands Administrator Comment, Jan. 26, 2016 (“PacifiCorp and its predecessors have been good neighbors and is an extremely important economic asset to Emery County.”).

In response to comments requesting that EPA consider all the required factors and conduct all contemplated analyses, EPA attempted to excuse its failure by erroneously stating that “[n]either the CAA nor the RHR provide for consideration of the affordability of controls, ratepayer impacts or potential job losses as part of a BART determination analysis.”²⁰ EPA’s position is inconsistent with the CAA and the BART Guidelines.

As noted above, the CAA requires the consideration of “energy ... impacts,” 42 U.S.C. § 7491(g)(2), and the BART Guidelines contemplate consideration of “economic disruption or unemployment.” 40 C.F.R. pt. 51, app. Y, § IV.D.4.h.5. The CAA also requires EPA, under a separate and independent provision, to evaluate potential loss or shifts of employment related to implementation plans on an ongoing basis. Section 7621 of the CAA requires EPA to “conduct continuing evaluations of potential loss or shifts of employment which may result from the administration or enforcement of . . . implementation plans, including where appropriate, investigating threatened plant closures or reductions in employment allegedly resulting from such . . . enforcement.” 42 U.S.C. § 7621(a) (emphasis added); Murray Energy Corp. v. McCarthy, No. 5:14-CV-39, 2016 WL 6083946, at *9 (N.D.W.Va. Oct. 17, 2016) (interpreting Section 7621 to “impose a

²⁰ EPA RTC at 364–65.

mandatory duty upon the EPA”). EPA is acutely aware that its BART FIPs have resulted in the shutting down of coal-fired units.

EPA attempts to excuse its failure to consider economic disruption and unemployment by suggesting that such impacts should be considered “only in ‘unusual circumstances.’”²¹ This attempted “unusual circumstances” excuse derives from a different section of the BART Guidelines and is irrelevant here. *Compare* 40 C.F.R. pt. 51, app. Y, § IV.D.4.h.5 (consideration of economic and employment impacts as part of the *energy impacts analysis* for two similar alternatives) *with* 40 C.F.R. pt. 51, app. Y, § IV.E.3.2 (identifying the “unusual circumstances” when the *affordability of the controls* should be considered in *selecting a best alternative*). But in any event, this case does present “unusual circumstances” warranting consideration of economic effects. All of the BART units are located in close proximity to several small communities that are highly dependent on the mining and utility industries, and the employment impacts from closure of even one unit would be significant for these Counties. In addition to the numerous comments that address these unusual circumstances in the Counties, EPA itself cites data that qualify as the “unusual circumstances” when the

²¹ EPA RTC at 364–65.

affordability of controls should be considered, *i.e.*, when such costs impact “product prices, the market share, and profitability of the source.”²²

EPA further attempts to excuse its failure to consider economic and unemployment impacts by shifting the responsibility for performing such analysis away from itself. EPA stated, “[W]e lack evidence to support the assertions that our proposed FIP would result in significant rate increases, jeopardize the plant’s operations, or result in any other economic effects. In the absence of such evidence, commenter’s assertions regarding job losses are speculative, and we cannot consider them as part of our BART determination.”²³ But EPA had a statutory duty (under Section 7621 as addressed above) to conduct the very employment analysis that would have confirmed the job loss information EPA claims it lacked. Murray Energy Corp., No. 5:14-CV-39, 2016 WL 6083946, at *25. EPA cannot claim it “lacked evidence” when it had the statutory duty to collect the evidence in the first instance and yet failed to do so. Further, because EPA has seized the prerogative to propose the FIP, it has the duty to conduct the economic analysis—not the State or the petitioners. See North Dakota v. EPA, 730 F.3d at 764; 77 Fed. Reg. at 40,164.

²² See EPA RTC at 370 (estimating, based on EPA’s own cost estimates, that installation of SCR will result in 5-10% higher rates).

²³ EPA RTC at 365.

III. The Public Interest Favors a Stay, and There Will Be No Harm to the Other Parties.

In addition to the arguments made by the other movants (which the Counties adopt), the Counties note the public has an interest in avoiding economic disruption, unemployment, and rate increases. In addition, and as further explained by the other movants, there would be no harm to the opposing parties if the Final Rule were delayed for the short review period because visibility is not a public health concern, any potential improvement in visibility from the SCR would be imperceptible to the human eye, and the Final Rule does not even require any further emission reductions until 2021.

CONCLUSION

Based on the foregoing, and on the reasons set forth by the State of Utah and PacifiCorp, the Counties respectfully request that the Court grant the moving parties' motions to stay.

/s/Martin K. Banks

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/s/Lauren E. Hosler

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CERTIFICATE OF DIGITAL SUBMISSION

I hereby certify with respect to the foregoing:

- 1) all required privacy redactions have been made pursuant to Rule 25.5 of the Tenth Circuit Local Rules;
- 2) if required to file additional hard copies, that the ECF submission is an exact copy of those documents; and,
- 3) the digital submission has been scanned for viruses with the most recent version of a commercial virus scanning program, Endpoint Protection (Product version 4.7.214.0) most recently updated on November 2, 2016, and according to the program, the submission is free of viruses.

Respectfully submitted this 2nd day of November, 2016.

STOEL RIVES LLP

/s/Lauren E. Hosler
Lauren E. Hosler

**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATION
AND TYPE-FACE REQUIREMENTS**

In accordance with this Court's Order of October 6, 2016, which allows the Counties to share in the petitioners' combined limitation of 20,800, this motion contains 3,184 words, exclusive of the items listed in Fed. R. App. P.

32(a)(7)(B)(iii).

This motion complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because this motion has been prepared in a proportionally spaced typeface using MS Word 2010 in 14 point Times New Roman.

Respectfully submitted this 2nd day of November, 2016.

STOEL RIVES LLP

/s/Lauren E. Hosler

Lauren E. Hosler

CERTIFICATE OF SERVICE

I hereby certify that on this 2nd day of November, 2016, the foregoing
EMERY COUNTY AND CARBON COUNTY'S MOTION TO STAY was
 filed electronically with the Clerk of the Court for the United States Court of
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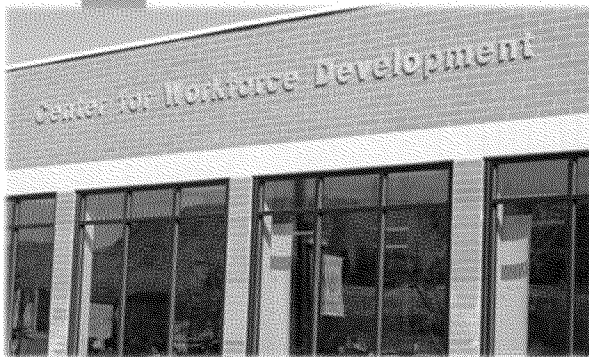
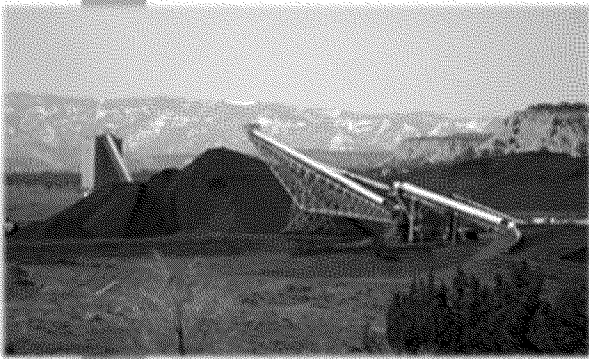
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/s/Lauren E. Hosler

Lauren E. Hosler

Exhibit A
***State of Utah v. EPA*, Consolidated Case**
Nos. 16-9541, 16-9542, 16-9543, 16-9545

South Eastern Utah Economic Development
District, Workforce Study, March 2016
("SEUEDD")



Workforce Study

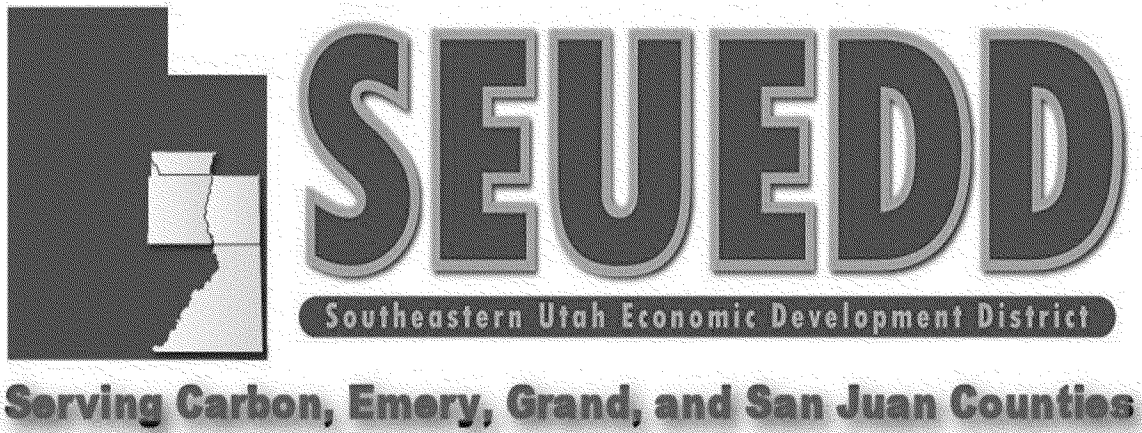
SEUEDD

South Eastern Utah

Economic Development District

March 2016

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Workforce Study Summary

Carbon and Emery counties are located in the eastern central region of Utah. The two counties have a combined geographic area of 5,947 square miles and a population of approximately 31,000.¹ The two counties have experienced a decrease in employment and population over the past few years, in large part due to the downturn in the coal industry, which is a major industry for the area.

The purpose of this study is to provide information that will be used to guide secondary higher, and continuing education programs to better prepare dislocated workers to obtain jobs in new industries, and to aid local economic development efforts to diversify the economy of the region.

Key findings, which will be explained throughout the report, include:

- A diversification of industries is needed to avoid over-reliance on the mining industry
- Industries that should be pursued based on current and future employment needs:
 - Information Technology
 - Support to growing tech businesses in Salt Lake and Utah counties
 - Manufacturing
 - There are multiple opportunities to attract manufacturing facilities to the area
 - Composites manufacturing is strong in Utah and some companies have already located in the area
 - Supply Chain Management and Transportation
 - There is an absence of technology and transit means to bring product to market in a quicker, more efficient way
 - Education
 - Increased demand for educators, especially in rural Utah
 - Other support industries
 - Healthcare, particularly nurses
- Growing industries based on enrollment trends in applied technology center (ATC), concurrent enrollment (CE), and career and technical education (CTE) programs:
 - Education
 - Business
 - Engineering
 - IT
- Gaps exist between the workforce needed and the workforce that is being trained, primarily for electrical positions (both electricians and engineers), educators, transportation, and construction. While more individuals are being trained in IT,; there is a lack of IT jobs in the area, indicating a key industry to target.

Demographics

Population Growth

Utah is one of the most-rapidly-growing states in the nation, having grown by 8.4 percent since 2010. However, while Utah is growing rapidly, growth projections for Carbon and Emery counties are much slower, with total population growth of approximately 2,500 persons by 2040, or a total

¹ Sources: Governor's Office of Management and Budget: 32,370; Utah Department of Transportation Traffic Analysis Zones: 31,842; US Census Bureau July 1, 2015 Estimate: 30,849

population of nearly 35,000 persons at that time. The current population is approximately 31,000 persons, with roughly 2/3 of that population in Carbon County and 1/3 located in Emery County.²

Demographic Characteristics

Compared to the nation, Utah has the largest household sizes and youngest median age. Household sizes in Carbon and Emery counties are not as large as the statewide average, and the median age in the two counties is not quite as young as statewide.

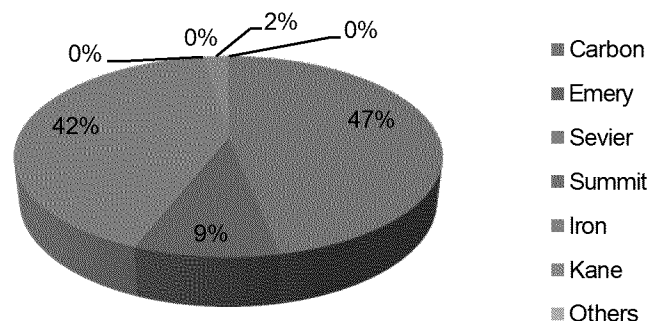
Utah has the largest household size in the nation at 3.16 persons compared to 2.65 persons nationally. Household sizes in Carbon and Emery counties, at 2.61 and 2.96 persons respectively, are closer to national trends.

While Utah has the largest household size nationally, it also has the youngest median age, suggesting there are more young families with children in Utah. The median age in Utah is 29.9 years, while the median age in Carbon County is 34.3 years and 34.0 years in Emery County. The median age nationwide is 37.4 years.

Employment

Carbon and Emery counties are known for their reliance on mining. In terms of coal production statewide, Carbon County is the largest producer at 47 percent, followed by Emery County at 9 percent. Combined, the two counties account for 56 percent of all coal production in the State of Utah. Therefore, the counties have been hit hard by the decline in mining employment.

Figure S1: Coal Production in Utah by County, 2015



Mining employment in Carbon County has declined steadily, by approximately 163 jobs, over the past three years. This represents a decrease of 21 percent in mining.

Jobs in other sectors have held more steady, showing job growth in the Construction sector, Education Services, Accommodation & Food Services, Health Care/Social Assistance and in Retail Trade.

Emery County has been harder hit by the loss of mining jobs – a total of 156 jobs that represent a decline of 36 percent in mining over the past three years. In addition, there were job losses in every other industry sector, with the exception of Accommodation & Food Services.

The largest employers in Carbon County include Castleview Hospital, Utah State University Eastern and Wal-Mart. Major employers in Emery County reflect the importance of the energy industry for that county: Energy West Mining Company, Nielson Construction and Castle Valley Mining. Not surprisingly, Emery County has been particularly hard hit by the downturn in the energy industry.

Nearly one-fourth of Emery County workers are commuting to work in places outside of Emery County. This is roughly double the percentage of commuters leaving Carbon County. These

² Sources: Governor's Office of Management and Budget: 32,370; Utah Department of Transportation Traffic Analysis Zones: 31,842; US Census Bureau July 1, 2015 Estimate: 30,849

statistics reflect the importance of job creation closer to home. The average travel time to work for Carbon County commuters is 16 minutes and 18.5 minutes in Emery County. However, 29 percent of the population in Emery County has a travel time of 25 minutes or longer, while only 19 percent of the Carbon County population commutes for 25 minutes or more.

Education

Trends indicate that the workforce is becoming increasingly more educated. In Carbon County, the percent of the population with a college degree has increased to 58 percent – up from 55 percent in 2009; in Emery County the percentage has increased to 56 percent (up from 45 percent in 2009; statewide the percentage has increased to 67 percent (up from 64 percent in 2009). So, while educational levels are increasing in Carbon and Emery counties, they are still below the State average.

Average Wages

Highest-paying wages for Carbon County, as of 2015, are in Mining, followed by Utilities. It is interesting that the average wage paid in Mining is higher in 2015 than in 2012, suggesting that the job losses occurred in the lower-paying positions. However, the average mining wage in Emery County has declined significantly since 2012 (from \$6,299 to \$4,964) reflecting the closure of at least one mine, and the temporary lack of expansion of others.

Mining Industry Trends

National/Global Trends

Sentiment in the national and global mining markets trended downwards in 2015, continuing a pattern that has extended more than three years. Prices for raw materials have declined to levels last seen in 2008 and 2009, a period which was largely deemed as a low spot in mining history.

Several factors are driving the decline in the national and global mining markets, the most significant of which is global economic weakness associated with China. Since 2000, China has been a voracious consumer of materials, including aluminum, copper, nickel, zinc, and coal, amongst others. Robust economic growth propelled Chinese developments, while world mining producers scrambled to maintain necessary supply. In recent years, particularly in 2015, a significant decline in Chinese markets has resulted in an oversupply of materials globally, and a concurring decline in prices.

Economic indicators within the mining industry anticipate the following for 2016:

- Further declines in prices for aluminum, zinc, and lead;
- Potential price increases for nickel, due to limited supply; and
- Possible year-end price increases for copper, albeit nominal.

More long-term forecasts show an eventual change in the consumption of fossil fuels, with an eventual greater dependence upon natural gas and renewable sources (wind, solar, biomass, etc.). Global coal consumption is anticipated to continue to rise until roughly 2020, with environmental restrictions thereafter resulting in an increased usage of alternative sources. Highlights from the global fossil fuels market include:

- Current downward pressures on coal pricing due to declining needs from the Chinese market. China accounts for roughly 50 percent of global coal consumption;

- Coal use worldwide expanded sharply in roughly 2003, and several emerging markets experienced robust growth and needs for energy sources. Growth is still anticipated for coal until roughly 2020, while alternative sources are estimated to gain market share at that time. Nonetheless, predictions for significant coal consumption worldwide continue past 2040; and
- Roughly 31 percent of global electricity needs are anticipated to be met by coal in 2040.

Local/Utah Mining Trends

The Utah mining market largely follows global and national trends, with current conditions revealing depressed prices. Additionally noted for Utah is the impact of political pressures that influence the ability of regional and local mining companies to expand. Highlights for local trends include the following;

- According to the Department of Energy, roughly 80% of the electricity generated in Utah comes from coal (as of 2015);
- Approximately 17 million tons of coal are produced annually, with sales in 2014 of \$570.8 million (from coal produced on Federal lands). Royalty revenues for the same period for coal were reported at \$41.1 million;
- The State produces roughly 1.5 to 2.0% of U.S. coal, with roughly 27% of that production being used out of State;
- Utah has seven operating mines that produce coal from roughly 71 leases, covering approximately 83,000 acres, according to the Department of Energy. Present projections suggest that the existing mines have roughly 15 years of reserves at the present rate of production (and using the existing methods of mining), while additional leasing could extend the life of Central Utah coal fields by 40 to 50 years, depending on coal prices;
- As of 2015, Carbon County had four of the state's seven coal mines, while Emery County had two coal mines;
- Notable, however, is that new coal leases are presently prohibited, with the United States government placing a moratorium on such activity until the coal leasing program is better analyzed. Consequently, local companies wishing to expand are now postponing any plans of growth;
- The local labor force (in Carbon and Emery Counties) has felt the impacts of weakness in the global and national mining markets. Roughly 150 mining jobs have been lost in Emery County in the past three years, while approximately 160 mining jobs have been lost in Carbon County since 2012; and
- Kennecott (Rio Tinto) significant layoffs in Utah in 2016 due to low copper prices and unfavorable mining conditions. It also anticipates that copper needs may not escalate until mid-2017. In early March 2016, Kennecott laid off 200 workers, resulting in a total of nearly 300 since the end of 2015.

Both nationally and locally, mining experts indicate a need for companies to become more innovative in order to survive declining prices. Improvements are noted to be necessary for supply chain management, and specifically, the speed and ease at which products are brought to market. Industry analysts forecast the potential for increased job growth throughout Utah in fields which specialize in supply chain economics and delivery for mining product.

Occupational and Skills Analysis

Missing Skills in the Workforce

Employers in the area indicated that, on average, only 45 percent of applicants from the local area have the skills, training, certificates, or degrees required for the position for which they are applying. While some of the skills lacking, like a strong work ethic, cannot be taught in a classroom or other work setting, other skills can. Some of the skills lacking include:

- Communication
- Computer and technology
- Technical programs (e.g., welding, machine shop, electrical, etc.)
- Management

“Although we have ultimately been successful, it has been difficult to hire locally because many of the applicants lack essential soft skills, primarily written and verbal communication skills.”

Current and Future Employment Needs

Businesses in the area have a variety of current and future employment needs. Some of these needs are outlined below:

Table S1: Current Employment Needs and Requirements

Industry	Employment Needs	Required skills, training, degrees, or certifications
Education	Building Maintenance	No degree, license, or certification required (unless working with asbestos), specialized skills and experience in HVAC, electrical, plumbing, building construction, or auto maintenance preferred
Education	CTE Instructor	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Custodian	None
Education	School Administrator	Utah School Administrator/Supervisor License, Master's Degree in School Administration
Education	Special Education Teacher	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Speech and Hearing Teacher	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Teachers(Art, Geography, Math, Music, Science)	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Teaching Assistant	Associates Degree, ParaPro Assessment Test
Healthcare	Nurse	Degree in Nursing and licensure
IT	Programmer	Technical training
IT	Web Designer	Technical training
IT	Database Engineer	Technical training
Oil, Gas & Mining/Manufacturing	Apprentice Electrician	None, electrical training preferred
Oil, Gas & Mining/Manufacturing	Electrical Engineer	Degree in Electrical Engineering
Oil, Gas &	Journeyman Electrician	Electrician Certification

Industry	Employment Needs	Required skills, training, degrees, or certifications
Mining/Manufacturing		
Manufacturing	Chemical Engineer	Degree in Chemical Engineering
Professional, Scientific, & Technical Services	Communications Assistant (entry-level position)	Type 30 WPM, pass entry-level dictation exam
Utilities/Energy	Power Plant Manager	Management experience
Utilities/Energy	Utility Workers	None

Opportunities for Job Growth

There are several opportunities for job growth in a variety of industries that could be pursued in Carbon and Emery counties. These industries include:

- Other Mining
- Information Technology
- Manufacturing/Re-manufacturing
- Supply Chain Management, Logistics, and Delivery Systems
- Warehousing and Distribution
- Energy
- Education
- Healthcare
- Tourism and Other Non-basic industries

Several employers indicate the need for streamlining the mining process, from extraction to eventual delivery. Consequently, a variety of job opportunities may be presented if current political stalemates are overcome and leasing efforts are renewed. With increased scrutiny on distribution of coal, particularly to neighboring states and outside of the country, supply chain management and product delivery specialists will be required. Mining companies will need to be more innovative in order to compete with low prices and limited demand.

Employment Needs and Available Workforce Gap

In 2015, there were 1,889 jobs postings in Carbon and Emery counties on the Department of Workforce Services website. Of the total postings, 1,690, or 89 percent, were in Carbon County.

Table 2 compares the workforce needs (jobs posted in 2015) with the number of students enrolled in various programs (ATC and CTE) to determine what gaps, if any, exist.³ There is a gap between the number of postings and the workforce that is being trained for most of the positions. However, more welders are being trained than welding positions that are available. Furthermore, many individuals are seeking IT training; however, there are few jobs to fill the supply. There is a growing workforce of individuals with IT skills that could be used to attract IT businesses to the area.

Table S2: Employment Needs and Available Workforce Gap Comparison

Job Title	2015 Job Postings	Enrollment				Difference ⁴
		USU Eastern	CWD	Carbon CTE	Emery CTE	
Teacher	60	55	0	0	0	5
Electrician	46	1	0	0	0	45

³ The difference assumes 100 percent retention in Carbon and Emery counties.

⁴ Difference = 2015 Job Postings – total enrollees from each institution

Job Title	2015 Job Postings	Enrollment				Difference ⁴
		USU Eastern	CWD	Carbon CTE	Emery CTE	
Electrical Engineer	6	4	0	0	0	2
Other Engineers	17	17	0	0	0	0
Other Electronics	13	3	0	0	0	10
Welding	32	25	28	25	79	-125
Construction	132	0	10	0	23	99
Heavy Equipment & Trucking	169	60	0	0	0	109
IT	17	17	96	438 ⁵	50	-584
Machinist	3	5	0	0	12	-14
Nursing	22	9	0	0	0	13

⁵ There are 438 students enrolled in Information Technology, with accumulative course enrolment of 581; therefore, each Information Technology student enrolled in 1.3 Information Technology courses. Overall, the average CTE student enrolled in 2.67 CTE courses.

Introduction

Carbon and Emery counties are located in the eastern central region of Utah. The two counties have a combined geographic area of 5,947 square miles and a population of approximately 31,000.⁶ The two counties have experienced a decrease in employment and population over the past few years, in large part due to the downturn in the coal industry, which is a major industry for the area.

The purpose of this study is to provide information that will be used to guide secondary, higher, and continuing education programs to better prepare dislocated workers to obtain jobs in new industries, and to aid local economic development efforts to diversify the economy of the region.

This report is separated into 5 sections:

- Demographics: An analysis of the study area's demographics, including population and employment
- Mining Industry Trends: Includes both national and regional trends
- Occupational and Skills Analysis: Outlines current employment needs and opportunities for employment going forward, as well as the skills needed for those positions
- Educational and Skills Trends: Analyzes trends in enrollment in various college, applied technology center (ATC), concurrent enrollment (CE), and career and technical education (CTE) programs
- Employment Needs and Available Workforce Gap Analysis: Compares and identifies gaps between the number of positions posted for various industries and the number of individuals being trained that could fill those positions

Summary of Findings

Key findings, which will be explained throughout the report, include:

- A diversification of industries is needed to avoid over-reliance on the mining industry
- Industries that should be pursued based on current and future employment needs:
 - Information Technology
 - Support to growing tech businesses in Salt Lake and Utah counties
 - Manufacturing
 - There are multiple opportunities to attract manufacturing facilities to the area
 - Composites manufacturing is strong in Utah and some companies have already located in the area
 - Supply Chain Management and Transportation
 - There is an absence of technology and transit means to bring product to market in a quicker, more efficient way
 - Education
 - Increased demand for educators, especially in rural Utah
 - Other support industries
 - Healthcare, particularly nurses
- Growing industries based on enrollment trends in applied technology center (ATC), concurrent enrollment (CE), and career and technical education (CTE) programs:
 - Education
 - Business

⁶ Sources: Governor's Office of Management and Budget: 32,370; Utah Department of Transportation Traffic Analysis Zones: 31,842; US Census Bureau July 1, 2015 Estimate: 30,849

- Engineering
- IT
- Gaps exist between the workforce needed and the workforce that is being trained, primarily for electrical positions (both electricians and engineers), educators, transportation, and construction. Contrarily, more individuals are being trained in IT; however, there is a lack of IT jobs in the area, indicating a key industry to target.

Table 1: Current Employment Needs and Requirements

Industry	Employment Needs	Required skills, training, degrees, or certifications
Education	Building Maintenance	No degree, license, or certification required (unless working with asbestos), specialized skills and experience in HVAC, electrical, plumbing, building construction, or auto maintenance preferred
Education	CTE Instructor	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Custodian	None
Education	School Administrator	Utah School Administrator/Supervisor License, Master's Degree in School Administration
Education	Special Education Teacher	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Speech and Hearing Teacher	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Teachers(Art, Geography, Math, Music, Science)	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Teaching Assistant	Associates Degree, ParaPro Assessment Test
Healthcare	Nurse	Degree in Nursing and licensure
IT	Programmer	Technical training
IT	Web Designer	Technical training
IT	Database Engineer	Technical training
Oil, Gas & Mining/Manufacturing	Apprentice Electrician	None, electrical training preferred
Oil, Gas & Mining/Manufacturing	Electrical Engineer	Degree in Electrical Engineering
Oil, Gas & Mining/Manufacturing	Journeyman Electrician	Electrician Certification
Manufacturing	Chemical Engineer	Degree in Chemical Engineering
Professional, Scientific, & Technical Services	Communications Assistant (entry-level position)	Type 30 WPM, pass entry-level dictation exam
Utilities/Energy	Power Plant Manager	Management experience
Utilities/Energy	Utility Workers	None

Demographics

Population Growth

Utah is one of the most-rapidly-growing states in the nation, having grown by 8.4 percent since 2010. Only four states have grown at faster rates – North Dakota, District of Columbia, Texas and Colorado. This bodes well for economic development and the creation of a strong workforce.

Table 2: Five Fastest-Growing States (Source: US Census Bureau)

State	Population Growth Since 2010
North Dakota	12.5%
District of Columbia	11.7%
Texas	9.2%
Colorado	8.5%
Utah	8.4%

Utah's population reached an estimated 3,000,000 persons in October 2015. It took 20 years for the population to increase from 2,000,000 to 3,000,000; however, the next one million increase in population is expected to take only 16 years (by 2031). Utah grows by natural increase (2/3 of total growth), as well as in-migration (1/3 of total growth).

The most rapidly-growing counties in Utah since 2010 are:

- Wasatch (17.8%)
- Uintah (13.1%)
- Morgan (12.0%)
- Washington (10.0%)
- Duchesne (9.5%)

The only counties in Utah with declining growth rates since 2010 are:

- Piute (-4.6%)
- Carbon (-3.5%)
- Emery (-3.1%)
- Garfield (-2.9%)
- Beaver (-2.5%)
- Wayne (-2.0%)
- Sevier (-0.1%)

Wasatch and Morgan counties, which had extremely high population growth between 2010 and 2014, also have a significant portion of the population that do not work in their respective counties. This suggests that although the population has increased in these areas, it is not due to economic development and job growth in the counties; rather, these are bedroom communities that support job growth along the Wasatch Front.

Table 3: Population Change and Percent of Workers Working Outside County of Residence (Source: ACS 2014)

County	Population Change (2010-2014)	Percent of Workers Working Outside of County of Residence					
		2010	2011	2012	2013	2014	Change 2010-2014
Wasatch	17.8%	41.4%	42.9%	46.1%	44.7%	46.0%	4.7%
Uintah	13.1%	7.5%	8.7%	7.8%	8.4%	8.4%	0.9%

County	Population Change (2010-2014)	Percent of Workers Working Outside of County of Residence					Change 2010-2014
		2010	2011	2012	2013	2014	
Morgan	12.0%	60.5%	63.1%	63.2%	63.8%	65.1%	4.6%
Washington	10.0%	2.5%	2.5%	2.7%	2.4%	2.5%	0.0%
Duchesne	9.5%	15.2%	16.9%	18.1%	17.5%	15.5%	0.3%
Sevier	-0.1%	8.7%	8.2%	8.8%	7.9%	6.8%	-1.9%
Wayne	-2.0%	8.0%	8.5%	8.1%	7.4%	6.9%	-1.0%
Beaver	-2.5%	8.1%	10.9%	12.4%	12.3%	10.6%	2.5%
Garfield	-2.9%	7.8%	5.5%	4.9%	8.2%	10.7%	3.0%
Emery	-3.1%	24.7%	23.4%	22.4%	22.6%	21.2%	-3.5%
Carbon	-3.5%	10.2%	11.0%	10.2%	9.9%	10.3%	0.1%
Piute	-4.6%	34.8%	27.2%	26.9%	28.8%	28.5%	-6.4%

Population Growth Projections

Two sources have been used to estimate population growth for Carbon and Emery Counties: Traffic Area Zone projections, as provided by UDOT; and population projections from the Governor's Office of Management and Budget. Both sources provide fairly similar results, although the GOMB figures cover the time period from 2010 to 2040, and the TAZ data extends from 2011 to 2040. Projected growth rates for both counties are extremely low, especially considering the rapid growth rates being experienced in other parts of Utah.

Table 4: Comparison of Carbon and Emery County Growth Projections through 2040 (Source: GOMB; UDOT; ZPFI)

	2010	2011	2040	Actual Growth	AAGR*
Carbon County					
TAZ		20,882	22,230	1,348	0.22%
GOMB	21,403		22,860	1,457	0.22%
Emery County					
TAZ		10,960	12,070	1,110	0.33%
GOMB	10,976		12,207	1,231	0.35%
Carbon & Emery Counties					
TAZ		31,842	34,300	2,458	0.26%
GOMB	32,379		35,067	2,688	0.27%

*Average annual growth rate

A breakout of the growth projections in each County is provided below, showing that the strongest growth is projected for Price City.

Table 5: Carbon and Emery County Growth Projections through 2040 (Source: UDOT)

	2011	2024	2034	2040	Grand Total
Carbon County					
Balance of Carbon County	7,304	7,422	7,620	7,775	471
East Carbon	1,269	1,290	1,324	1,351	82
Helper	2,148	2,182	2,241	2,286	139
Price	8,503	8,641	8,871	9,052	549
Scofield	23	24	24	25	2

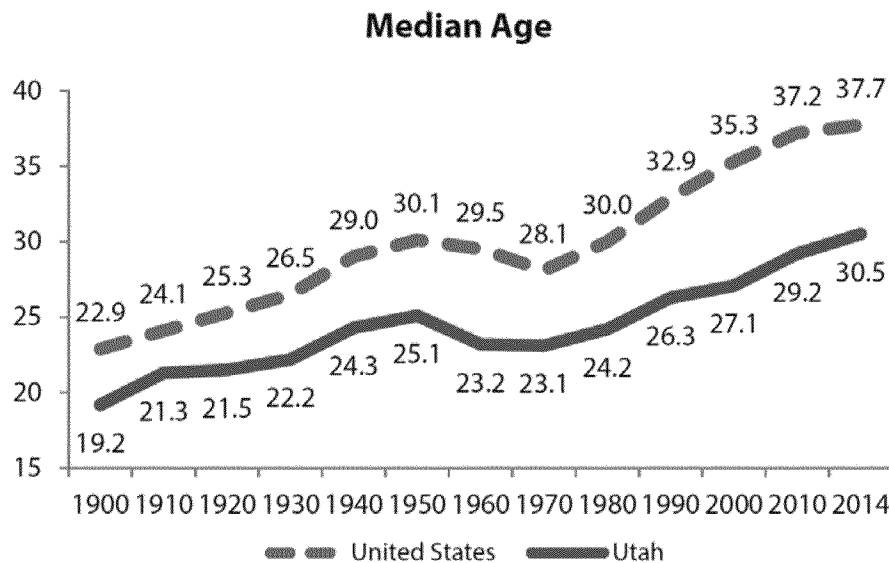
	2011	2024	2034	2040	Grand Total
Wellington	1,635	1,662	1,706	1,741	106
Total Carbon County	20,882	21,221	21,786	22,230	1,348
Emery County					
Balance of Emery County	1,600	1,630	1,673	1,687	87
Castle Dale	1,628	1,698	1,771	1,792	165
Clawson	163	170	177	179	16
Cleveland	463	483	504	510	47
Elmo	417	435	454	460	42
Emery	288	300	313	317	29
Ferron	1,624	1,694	1,767	1,788	165
Green River	951	992	1,034	1,047	96
Huntington	2,359	2,501	2,634	2,674	314
Orangeville	1,468	1,532	1,597	1,616	149
Total Emery County	10,960	11,435	11,925	12,070	1,110
TOTAL Carbon & Emery	31,842	32,656	33,711	34,300	2,458

Demographic Characteristics

Median Age

While Utah has the largest household size nationally, it also has the youngest median age, suggesting there are more young families with children in Utah. Carbon and Emery are both below the national median but above the state median.

Figure 1: Utah Median Age (Source: ACS 2014)



Source: U.S. Census Bureau, Decennial Census; 2014 American Community Survey

Table 6: Median Age (Source: ACS 2014)

Area	Median Age
Carbon County	34.3
Emery County	34.0

Area	Median Age
State of Utah	29.9
United States	37.4

Household Size

Utah has the largest household size in the nation at 3.14 persons compared to 2.63 persons nationally. Carbon is near the national average, and Emery is slightly above the national average but below the state average.

Table 7: Average Household Size (Source: ACS 2014)

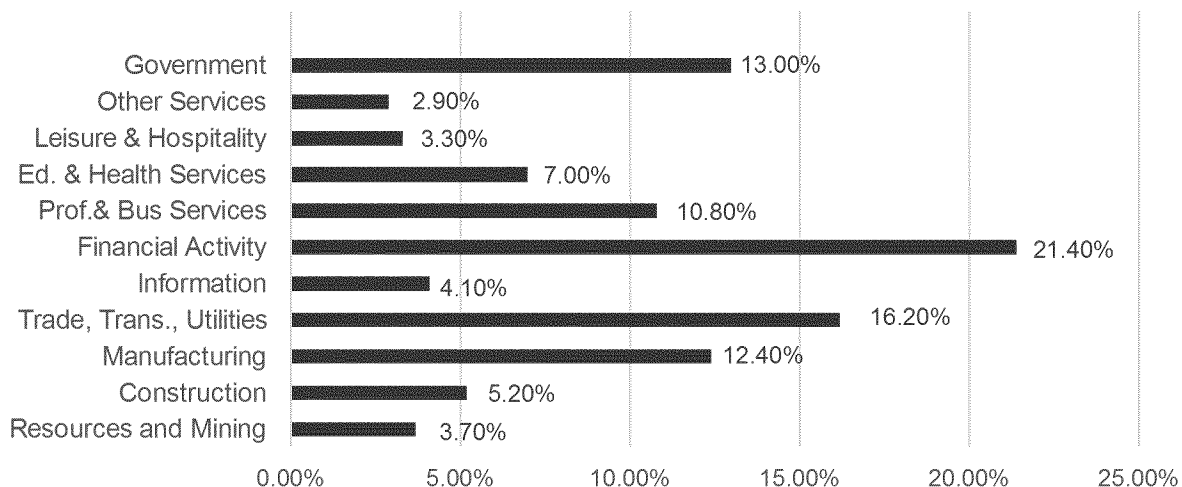
Area	Household Size
Carbon County	2.61
Emery County	2.96
State of Utah	3.14
United States	2.63

Employment

Utah's nonagricultural employment increased 3.2 percent from December 2014 to December 2015, or by a total of 43,000 jobs.

Mining is one of the smallest industry sectors in the workforce in the State of Utah, yet it is the one of the largest sectors in Carbon and Emery counties.

Figure 2: Percent of Total Gross Domestic Product By Industry - Utah



Utah's unemployment rate was 3.5 percent in December 2015, below that of 3.6 percent in December 2014. The national unemployment rate was 5.0 percent in December 2015.

Net job losses in Utah from December 2014 to December 2015 were noted in natural resources and mining (-1,100 jobs) and other services (-1,500 jobs). Increases in employment in Utah were highest for Education and Health Services (11,300 jobs), Leisure and Hospitality (8,700 jobs), Manufacturing (4,900 jobs), and Construction (4,200 jobs).

The Carbon County workforce, over the past two years, shows the following employment pattern. However, it is somewhat misleading as many people are leaving the area to find employment elsewhere.

Table 8: Carbon County Employment, 2014-2016

Period/year	Month	Labor Force	Employment	Unemployment	Unemployment Rate
2015	December	8,710	8,233	477	5.5%
2015	November	8,697	8,242	455	5.2%
2015	October	8,693	8,233	460	5.3%
2015	September	8,716	8,239	477	5.5%
2015	August	8,637	8,061	576	6.7%
2015	July	8,945	8,355	590	6.6%
2015	June	9,102	8,550	552	6.1%
2015	May	8,994	8,539	455	5.1%
2015	April	8,771	8,359	412	4.7%
2015	March	8,835	8,380	455	5.1%
2015	February	8,764	8,286	478	5.5%
2015	January	8,638	8,169	469	5.4%
2014	December	8,657	8,282	375	4.3%
2014	November	8,679	8,316	363	4.2%
2014	October	8,703	8,310	393	4.5%
2014	September	8,635	8,239	396	4.6%
2014	August	8,578	8,059	519	6.1%
2014	July	8,633	8,123	510	5.9%
2014	June	8,868	8,378	490	5.5%
2014	May	8,733	8,316	417	4.8%
2014	April	8,695	8,294	401	4.6%
2014	March	8,729	8,229	500	5.7%
2014	February	8,735	8,211	524	6.0%
2014	January	8,767	8,250	517	5.9%

Table 9: Emery County Employment, 2014-2016

Period/year	Month	Labor Force	Employment	Unemployment	Unemployment Rate
2015	December	4,323	4,040	283	6.5%
2015	November	4,353	4,110	243	5.6%
2015	October	4,345	4,093	252	5.8%
2015	September	4,320	4,070	250	5.8%
2015	August	4,407	4,108	299	6.8%
2015	July	4,507	4,215	292	6.5%
2015	June	4,531	4,238	293	6.5%
2015	May	4,520	4,283	237	5.2%
2015	April	4,570	4,365	205	4.5%
2015	March	4,595	4,360	235	5.1%
2015	February	4,585	4,329	256	5.6%
2015	January	4,416	4,163	253	5.7%
2014	December	4,389	4,185	204	4.6%
2014	November	4,431	4,236	195	4.4%
2014	October	4,517	4,320	197	4.4%
2014	September	4,487	4,283	204	4.5%
2014	August	4,572	4,335	237	5.2%
2014	July	4,652	4,412	240	5.2%
2014	June	4,778	4,530	248	5.2%
2014	May	4,803	4,577	226	4.7%
2014	April	4,876	4,656	220	4.5%

Period/year	Month	Labor Force	Employment	Unemployment	Unemployment Rate
2014	March	4,667	4,379	288	6.2%
2014	February	4,605	4,295	310	6.7%
2014	January	4,586	4,259	327	7.1%

As the table below demonstrates, Mining employment in Carbon County has declined steadily, by approximately 163 jobs, over the past three years. This represents a decrease of 21 percent in mining. Jobs in other sectors have held more steady, showing job growth in the Construction sector, Education Services, Accommodation & Food Services, Health Care/Social Assistance and in Retail Trade.

Table 10: Carbon County Employment by Industry Sector

Carbon County	Average Employment 2015 3Q	Average Employment 2014 3Q	Average Employment 2013 3Q	Average Employment 2012 3Q
Mining	618	683	668	781
Utilities	130	158	159	166
Construction	534	439	426	465
Finance & Insurance	156	177	194	198
Education Services	922	888	861	888
Accommodation & Food Services	723	685	678	636
Health Care/Social Assistance	1,180	1,079	1,107	1,072
Retail Trade	1,134	1,127	1,170	1,111

Emery County has been harder hit by the loss of mining jobs – a total of 156 jobs that represent a decline of 36 percent over the past three years. In addition, there were job losses in every other sector, with the exception of Accommodation & Food Services.

Table 11: Emery County Employment by Industry Sector

Emery County	Average Employment 2015 3Q	Average Employment 2014 3Q	Average Employment 2013 3Q	Average Employment 2012 3Q
Mining	272	381	487	428
Utilities	398	410	422	420
Construction	394	390	410	403
Finance & Insurance	41	45	43	46
Education Services	358	372	375	349
Accommodation & Food Services	350	295	280	283
Health Care/Social Assistance	178	176	198	191

Emery County	Average Employment 2015 3Q	Average Employment 2014 3Q	Average Employment 2013 3Q	Average Employment 2012 3Q
Retail Trade	477	479	465	482

Changes in the number of jobs by industry sector are shown in the following two tables, with industries that experienced an increase between 2011 and 2014 marked in bold.

Table 12: Carbon County Workforce, 2005-2014

Industry Sector	Actual Growth				Percent Growth			
	2005 - 2008	2008 - 2011	2011 - 2014	2005 - 2014	2005 - 2008	2008 - 2011	2011 - 2014	2005 - 2014
Mining	507	(329)	(297)	(119)	64%	-25%	-31%	-15%
Utilities	-	(3)	(18)	(21)	0%	-2%	-10%	-12%
Construction	53	91	(44)	100	16%	24%	-9%	31%
Manufacturing (31-33)	(40)	(19)	(15)	(74)	-10%	-5%	-4%	-18%
Wholesale Trade	30	34	(125)	(61)	7%	7%	-25%	-14%
Retail Trade (44 & 45)	1	(136)	5	(130)	0%	-11%	0%	-10%
Transportation and Warehousing (48 & 49)	80	53	72	205	18%	10%	12%	45%
Information	(8)	(16)	(20)	(44)	-7%	-15%	-21%	-37%
Finance and Insurance	6	1	(24)	(17)	3%	0%	-12%	-9%
Real Estate and Rental and Leasing	33	(12)	(21)	-	62%	-14%	-28%	0%
Professional Scientific & Technical Svc	(10)	9	7	6	-5%	5%	3%	3%
Admin., Support, Waste Mgmt, Remediation	(66)	132	(59)	7	-18%	44%	-14%	2%
Education Services	(8)	(74)	-	(82)	-1%	-7%	0%	-7%
Health Care and Social Assistance	129	(31)	50	148	14%	-3%	5%	16%
Arts, Entertainment, and Recreation	-	20	(2)	18	0%	18%	-2%	16%
Accommodation and Food Services	43	(30)	8	21	6%	-4%	1%	3%
Other Services (except Public Admin.)	(4)	(19)	(22)	(45)	-1%	-5%	-7%	-13%
Public Administration	(13)	21	(61)	(53)	-2%	2%	-7%	-6%
TOTAL	730	(341)	(554)	(165)	8%	-4%	-6%	-2%

Table 13: Emery County Workforce, 2005-2014

Industry Sector	Actual Growth				Percent Growth			
	2005 - 2008	2008 - 2011	2011 - 2014	2005 - 2014	2005 - 2008	2008 - 2011	2011 - 2014	2005 - 2014
Mining	(148)	(222)	(72)	(442)	-18%	-33%	-16%	-54%
Utilities	(18)	(10)	(3)	(31)	-4%	-2%	-1%	-7%
Construction	159	30	(26)	163	55%	7%	-5%	56%
Manufacturing (31-33)	4	(6)	(2)	(4)	18%	-23%	-10%	-18%
Wholesale Trade	(14)	(15)	3	(26)	-32%	-50%	20%	-59%

Industry Sector	Actual Growth			Percent Growth				
	2005-2008	2008-2011	2011-2014	2005-2014	2005-2008	2008-2011	2011-2014	2005-2014
Retail Trade (44 & 45)	42	(7)	8	43	10%	-2%	2%	10%
Transportation and Warehousing (48 & 49)	(87)	(3)	(12)	(102)	-52%	-4%	-16%	-61%
Information	(15)	(1)	(31)	(47)	-9%	-1%	-21%	-29%
Finance and Insurance	7	(10)	(4)	(7)	14%	-17%	-8%	-14%
Professional Scientific & Technical Svc	14	118	(121)	11	25%	171%	-65%	20%
Admin., Support, Waste Mgmt, Remediation	#N/A	#N/A	7	7	#N/A	#N/A	33%	33%
Education Services	13	20	30	63	4%	6%	8%	18%
Health Care and Social Assistance	42	(12)	(34)	(4)	23%	-5%	-16%	-2%
Accommodation and Food Services	5	(42)	16	(21)	2%	-15%	6%	-7%
Other Services (except Public Admin.)	(26)	14	(17)	29	-17%	11%	-12%	-18%
Public Administration	(4)	(1)	1	(4)	-1%	0%	0%	-1%
TOTAL	(15)	(149)	(252)	(416)	0%	-4%	-7%	-11%

Employment Growth Projections

Two sources have been used to estimate employment growth for Carbon and Emery Counties: 1) Traffic Area Zone projections, as provided by UDOT; and 2) employment projections from the Governor's Office of Management and Budget. Both sources provide fairly similar results, although the GOMB figures cover the time period from 2010 to 2040, and the TAZ data extends from 2011 to 2040. Projected growth rates for both counties are extremely low, especially considering the rapid growth rates being experienced in other parts of Utah.

Table 14: Comparison of Carbon and Emery County Growth Projections through 2040 (Source: GOMB; UDOT; ZPFI)

	2010	2011	2040	Actual Growth	AAGR*
Carbon County					
TAZ		12,190	14,575	2,385	0.62%
GOMB	12,656		15,254	2,598	0.62%
Emery County					
TAZ		10,960	12,070	1,110	0.33%
GOMB	6,028		7,232	1,204	0.61%
Carbon & Emery Counties					
TAZ		23,150	26,645	3,495	0.49%
GOMB	18,684		22,486	3,802	0.62%

*Average annual growth rate

Tables 15 and 16 list employment growth projections by industry for Carbon and Emery counties. Based on past trends, there is very little job growth projected to occur in this area. Areas for which growth is projected include Professional & Technical Services, Health & Social Services, Construction, Administrative & Waste Services, and Arts, Entertainment, & Recreation, although the anticipated growth in these sectors is minimal.

Table 15: Carbon County Employment Projections (Source: GOMB)

Industry	2010	2020	2030	2040	AAGR 2010-2040
Natural Resources	41	43	41	40	-0.08%
Mining	1,115	732	689	661	-1.73%
Utilities	142	109	93	81	-1.85%
Construction	587	544	634	704	0.61%
Manufacturing	366	444	421	386	0.18%
Wholesale Trade	490	477	487	487	-0.02%
Retail Trade	1,446	1,603	1,652	1,714	0.57%
Transportation & Warehousing	528	555	606	647	0.68%
Information	105	103	109	117	0.36%
Finance & Insurance	379	438	460	495	0.89%
Real Estate, Rental & Leasing	369	411	422	430	0.51%
Professional & Technical Services	303	357	447	556	2.04%
Management of Companies	16	18	17	17	0.20%
Administrative & Waste Services	638	809	969	1,108	1.86%
Educational Services	233	263	280	294	0.78%
Health & Social Services	1,671	1,997	2,253	2,470	1.31%
Arts, Entertainment & Recreation	157	178	203	235	1.35%
Accommodation & Food Services	779	833	898	975	0.75%
Other Services	852	848	905	967	0.42%
State & Local Government	1,874	2,039	2,245	2,442	0.89%
Federal Civilian	172	156	158	165	-0.14%
Federal Military	95	82	76	69	-1.06%
Farm	298	263	223	194	-1.42%
Total Employment	12,656	13,302	14,288	15,254	0.62%

Table 16: Emery County Employment Projections (Source: GOMB)

Industry	2010	2020	2030	2040	AAGR 2010-2040
Natural Resources	92	88	85	84	-0.30%
Mining	917	900	904	857	-0.23%
Utilities	152	107	89	81	-2.08%
Construction	607	779	924	1,023	1.76%
Manufacturing	86	89	85	77	-0.37%
Wholesale Trade	214	234	239	238	0.35%
Retail Trade	615	651	664	689	0.38%
Transportation & Warehousing	120	135	145	156	0.88%
Information	142	154	163	174	0.68%
Finance & Insurance	168	164	175	187	0.36%
Real Estate, Rental & Leasing	94	96	99	101	0.24%

Industry	2010	2020	2030	2040	AAGR 2010-2040
Professional & Technical Services	247	298	384	476	2.21%
Management of Companies	2	2	2	2	0.00%
Administrative & Waste Services	92	128	150	173	2.13%
Educational Services	21	27	27	28	0.96%
Health & Social Services	222	302	335	366	1.68%
Arts, Entertainment & Recreation	36	44	50	58	1.60%
Accommodation & Food Services	303	344	370	401	0.94%
Other Services	417	453	484	517	0.72%
State & Local Government	826	906	999	1,089	0.93%
Federal Civilian	62	59	59	62	0.00%
Federal Military	49	45	42	38	-0.84%
Farm	544	483	410	355	-1.41%
Total Employment	6,028	6,488	6,884	7,232	0.61%

Employer and Employee Characteristics

Largest Employers

The largest employers in Carbon County are the hospital, USU Eastern, Carbon School District, and Wal-Mart – none of which are mining companies. However, several companies in the second largest employee range shown below (100-249 employees) are in the energy sector.

Table 17: Largest Employers in Carbon County

Employer	Employee Range
Canyon Fuels Company LLP	250-499
Carbon School District	250-499
Castleview Hospital LLC	250-499
Utah State University/Eastern Utah	250-499
Wal-Mart	250-499
Intermountain Electronics, Inc.	100-249
Joy Technologies, Inc.	100-249
Sorenson Communications, Inc.	100-249
Elwood Staffing	100-249
West Ridge Resources, Inc.	100-249
Associated Fresh Markets, Inc.	50-99
Cadillac LLC	50-99
Carbon County	50-99
Castle Valley Center	50-99

Energy is definitely the top employer in Emery County and the County has been particularly hard hit by the downturn in the coal industry.

Table 18: Largest Employers in Emery County

Employer	Employee Range
Emery County School District	250-499
Energy West Mining Company	250-499

Employer	Employee Range
Nielson Construction/Staker-Parsons ⁷	250-499
PacifiCorp	250-499
Castle Valley Mining LLC	100-249
Emery County	50-99
Emery County Care & Rehab Center	50-99
Emery Telecom	50-99
Gas N Go	50-99
Ashworth Transfer	20-49
Brooklyn Management LLC	20-49
City of Green River	20-49

Employee Commuter Characteristics

Nearly one-fourth of Emery County workers are commuting to work in places outside of Emery County. This is roughly double the amount of commuters leaving Carbon County. County officials indicate that the increased number of individuals working outside of the Utah could be a result of miners leaving Utah to work in Wyoming mines while their families remain in Utah.

Table 19: Carbon County Commuter Data

Carbon County - Place of Work	2009	2010	2011	2012	2013	2014
Worked in state of residence	98.8%	98.8%	98.5%	98.9%	99.2%	98.7%
Worked in county of residence	90.3%	88.6%	87.5%	88.7%	89.3%	88.4%
Worked outside county of residence	8.5%	10.2%	11.0%	10.2%	9.9%	10.3%
Worked outside state of residence	1.2%	1.2%	1.5%	1.1%	0.8%	1.3%

Table 20: Emery County Commuter Data

Emery County - Place of Work	2009	2010	2011	2012	2013	2014
Worked in state of residence	99.7%	98.9%	98.8%	98.5%	98.2%	98.2%
Worked in county of residence	75.0%	74.2%	75.4%	76.1%	75.6%	77.0%
Worked outside county of residence	24.8%	24.7%	23.4%	22.4%	22.6%	21.2%
Worked outside state of residence	0.3%	1.1%	1.2%	1.5%	1.8%	1.8%

The average travel time to work for Carbon County commuters is 16 minutes and 18.5 minutes in Emery County. However, 29 percent of the population in Emery County has a travel time of 25 minutes or longer, while only 19 percent of the Carbon County population commutes for 25 minutes or more.

⁷ Nielson Construction was purchased by Staker-Parsons at the beginning of 2016

Table 21: Carbon County Commute Times

Carbon County - Commute Time	2009	2010	2011	2012	2013	2014
Less than 10 minutes	38.1%	36.9%	37.3%	37.2%	39.9%	40.6%
10 to 14 minutes	20.6%	22.9%	23.3%	25.2%	25.0%	24.4%
15 to 19 minutes	11.7%	12.4%	11.5%	11.5%	11.0%	12.2%
20 to 24 minutes	6.6%	6.6%	5.8%	5.6%	4.9%	4.5%
25 to 29 minutes	2.7%	2.3%	1.9%	1.5%	1.0%	1.3%
30 to 34 minutes	8.8%	7.0%	7.9%	7.8%	7.1%	6.2%
35 to 44 minutes	1.9%	2.3%	2.8%	3.2%	2.9%	3.9%
45 to 59 minutes	4.6%	4.2%	4.5%	3.7%	3.6%	2.3%
60 or more minutes	4.9%	5.4%	5.0%	4.3%	4.5%	4.8%
Mean Travel Time to Work	17.4	17.3	17.2	16.2	15.9	16.0

Table 22: Emery County Commute Times

Emery County - Commute Time	2009	2010	2011	2012	2013	2014
Less than 10 minutes	35.6%	35.8%	34.2%	36.7%	36.9%	36.1%
10 to 14 minutes	12.0%	10.6%	11.1%	11.0%	11.7%	14.1%
15 to 19 minutes	12.1%	11.2%	11.7%	11.8%	12.3%	11.9%
20 to 24 minutes	9.4%	8.9%	10.9%	10.9%	10.4%	9.3%
25 to 29 minutes	3.7%	4.0%	4.3%	3.9%	5.1%	5.6%
30 to 34 minutes	11.5%	12.0%	12.6%	10.6%	9.3%	10.6%
35 to 44 minutes	5.0%	5.2%	4.9%	4.8%	4.7%	4.4%
45 to 59 minutes	5.8%	5.6%	4.3%	4.0%	4.1%	3.5%
60 or more minutes	4.9%	6.7%	6.1%	6.4%	5.6%	4.6%
Mean Travel Time to Work	19.6	21.0	20.4	19.9	19.1	18.5

Education

Trends indicate that the workforce is becoming increasingly more educated. In Carbon County, the percent of the population with a college degree has increased to 58 percent – up from 55 percent in 2009; in Emery County the percentage has increased to 56 percent (up from 45 percent in 2009); statewide the percentage has increased to 67 percent (up from 64 percent in 2009). So, while educational levels are increasing in Carbon and Emery counties, they are still below the State average.

Table 23: Carbon County Educational Levels

Carbon County - Educational Attainment of Population Over 18	2009	2010	2011	2012	2013	2014
Less than high school graduate	14%	14%	13%	13%	14%	13%
High school graduate (includes equivalency)	32%	31%	30%	29%	29%	29%
Some college or associate's degree	42%	43%	45%	46%	46%	47%
Bachelor's degree or higher	13%	12%	11%	12%	11%	11%

Table 24: Emery County Educational Levels

Emery County - Educational Attainment of Population Over 18	2009	2010	2011	2012	2013	2014
Less than high school graduate	11%	11%	12%	11%	10%	11%
High school graduate (includes equivalency)	44%	40%	38%	36%	34%	33%
Some college or associate's degree	34%	37%	39%	42%	45%	45%
Bachelor's degree or higher	11%	11%	12%	11%	11%	11%

Table 25: State of Utah Educational Levels

State of Utah – Educational Attainment of Population Over 18	2009	2010	2011	2012	2013	2014
Less than high school graduate	10%	10%	10%	10%	10%	10%
High school graduate (includes equivalency)	26%	26%	25%	25%	24%	24%
Some college or associate's degree	39%	39%	39%	39%	40%	40%
Bachelor's degree or higher	25%	25%	26%	26%	26%	27%

Local school districts have indicated that, while participation in career and technical education (CTE) and concurrent enrollment (CE) programs is increasing, students are not entering the workforce immediately following graduation from high school. Many factors may contribute to this, including a lack of available positions, a desire to not do hard, physical labor, and more incentives to pursue additional education.

“Despite having participated in CTE programs and working in a trade during high school, many students are deciding to pursue a degree rather than enter the workforce following graduation from high school.”

Average Wages

Highest-paying wages for Carbon County, as of 2015, are in Mining, followed by Utilities. It is interesting that the average wage paid in Mining in Carbon County is higher in 2015 than in 2012, suggesting that the job losses occurred in the lower-paying positions. The opposite occurred in Emery County. The decrease in the average wage for mining in Emery County is likely a result of the closure of the Deer Creek Mine in 2015. The Deer Creek Mine was the last mine in Utah with union employees, which typically have higher wages than non-union employees. The loss of all 180 jobs, combined with the higher wages of union employees, explain the significant decrease in the average wage for mining in Emery County.

Construction and Accommodation & Food Services wages are down over the same time period, with slight increases in other industry sectors.

Table 26: Carbon County Average Monthly Wages

Sector – Carbon County	Average Monthly Wage – 2015 3Q	Average Monthly Wage – 2014 3Q	Average Monthly Wage – 2013 3Q	Average Monthly Wage – 2012 3Q
Mining	\$8,774	\$7,151	\$6,831	\$6,439
Utilities	\$6,510	\$6,467	\$6,434	\$6,362
Construction	\$4,277	\$4,079	\$4,252	\$4,508

Sector – Carbon County	Average Monthly Wage – 2015 3Q	Average Monthly Wage – 2014 3Q	Average Monthly Wage – 2013 3Q	Average Monthly Wage – 2012 3Q
Finance & Insurance	\$2,885	\$2,731	\$2,759	\$2,820
Education Services	\$2,216	\$2,225	\$2,249	\$1,893
Accommodation & Food Services	\$956	\$957	\$979	\$1,030
Health Care/Social Assistance	\$2,815	\$2,808	\$2,830	\$2,673
Retail Trade	\$1,985	\$1,924	\$1,863	\$1,904

Table 27: Emery County Average Monthly Wages

Sector – Emery County	Average Monthly Wage – 2015 3Q	Average Monthly Wage – 2014 3Q	Average Monthly Wage – 2013 3Q	Average Monthly Wage – 2012 3Q
Mining	\$4,964	\$6,206	\$6,080	\$6,299
Utilities	\$7,778	\$7,368	\$7,052	\$7,158
Construction	\$4,527	\$4,255	\$4,089	\$3,982
Finance & Insurance	\$2,562	\$2,367	\$2,788	\$2,549
Education Services	\$2,973	\$2,802	\$2,796	\$1,453
Accommodation & Food Services	\$1,245	\$1,225	\$1,103	\$1,087
Health Care/Social Assistance	\$1,376	\$1,403	\$1,388	\$1,525
Retail Trade	\$1,476	\$1,487	\$1,452	\$1,442

Average monthly wages in mining and utilities are among the highest in the two counties; therefore, this may somewhat account for why educational levels are still lower than the state average, as some students are still entering the workforce directly out of high school rather than continuing their education.

Table 28: Average Monthly Wages by Industry Sector in Carbon and Emery Counties, 2014

Industry Sector	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mining	\$5,305	\$5,437	\$5,690	\$5,697	\$6,033	\$6,620	\$6,586	\$6,765	\$6,916	\$7,544
Utilities	\$5,874	\$6,547	\$6,500	\$6,579	\$6,785	\$7,067	\$7,054	\$7,038	\$7,030	\$7,329
Wholesale Trade	\$2,746	\$3,190	\$3,400	\$3,841	\$4,239	\$4,472	\$5,203	\$5,076	\$5,656	\$5,199
Construction	\$3,066	\$3,875	\$3,747	\$3,706	\$3,750	\$3,991	\$4,052	\$4,144	\$4,128	\$4,924
Manufacturing	\$2,834	\$3,146	\$3,378	\$3,379	\$3,373	\$3,542	\$3,616	\$3,670	\$4,032	\$4,292
Admin., Support, Waste Mgmt, Remediation	\$1,969	\$2,420	\$3,132	\$1,439	\$3,448	\$3,498	\$4,181	\$3,972	\$3,988	\$4,044
Transportation and Warehousing	\$3,246	\$2,951	\$3,094	\$3,148	\$3,385	\$3,205	\$3,424	\$3,350	\$3,577	\$3,458
AVERAGE	\$2,675	\$2,864	\$2,958	\$3,148	\$3,213	\$3,359	\$3,694	\$3,304	\$3,283	\$3,442
Public Administration	\$2,558	\$2,621	\$2,776	\$2,906	\$2,929	\$2,950	\$2,993	\$3,029	\$2,982	\$3,089
Professional Scientific & Technical Svc	\$1,786	\$1,929	\$2,235	\$2,621	\$3,158	\$4,488	\$15,656	\$2,658	\$2,582	\$2,953
Other Services (except Public Admin.)	\$2,125	\$2,464	\$2,574	\$3,129	\$3,206	\$3,200	\$3,162	\$2,702	\$2,593	\$2,893

Industry Sector	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Information	\$1,955	\$2,035	\$2,038	\$2,154	\$2,195	\$2,372	\$2,464	\$2,571	\$2,655	\$2,733
Finance and Insurance	\$1,946	\$2,089	\$2,123	\$2,194	\$2,145	\$2,275	\$2,434	\$2,584	\$2,745	\$2,694
Education Services	\$2,019	\$2,227	\$2,356	\$2,449	\$2,638	\$2,617	\$2,412	\$2,412	\$2,328	\$2,313
Health Care and Social Assistance	\$1,536	\$1,657	\$1,713	\$1,733	\$1,897	\$1,899	\$1,958	\$2,069	\$2,132	\$2,186
Retail Trade	\$1,273	\$1,342	\$1,407	\$1,490	\$1,591	\$1,617	\$1,615	\$1,710	\$1,628	\$1,719
Accommodation and Food Services	\$767	\$817	\$855	\$871	\$928	\$959	\$996	\$1,007	\$993	\$1,049
Real Estate and Rental and Leasing	\$660	\$726	\$851	\$1,781	\$1,401	\$641	\$687	\$693	\$794	\$904
Arts, Entertainment, and Recreation	\$502	\$487	\$521	\$542	\$525	\$553	\$560	\$554	\$508	\$489

Mining Industry Trends

National/Global Mining Trends

Sentiment in the national and global mining markets trended downwards in 2015, continuing a pattern that has extended more than three years. Prices for raw materials have declined to levels last seen in 2008 and 2009, a period which was largely deemed as a low spot in mining history.

Several factors are driving the decline in the national and global mining markets, the most significant of which is global economic weakness associated with China. Since 2000, China has been a voracious consumer of materials, including aluminum, copper, nickel, zinc, and coal, amongst others. Robust economic growth propelled Chinese developments, while world mining producers scrambled to maintain necessary supply. In recent years, particularly in 2015, a significant decline in Chinese markets has resulted in an oversupply of materials globally, and a concurring decline in prices.

Mining experts anticipate that the low portion of this cycle could extend for a few years. Some upward pressure on prices might be seen as production has been significantly cut, thereby resulting in reduced supplies. Nonetheless, the forecast for nearly all metal and material types include depressed prices and historically low demand.

Weakness in the national and global mining sectors is also shown by the combined market values of the top ten firms. Deloitte Touche reported that at the end of 2015, these firms had a combined market value of \$280 billion, which is roughly one half of the total reflected just one year prior. Revenues and commodity prices are nearing levels last seen in 2008 and 2009, but debt on balance sheets is roughly 50 percent higher. The acquisition of debt in 2015 was notable, as weakness has now extended for several years and firms have reduced cash reserves. Cash reserves for the largest mining companies will allow for continued operations in 2016, but more regional operations will undergo significant cuts in employment and costs in the upcoming year.

Mining companies are not only experiencing tumbling demand and declining grades, but a lack of available financing. Several sources indicate that financing for new or expanded operations has all but dried up, while existing lines of credit have been tightened or have become more restrictive. With the lack of financing, regional companies have begun to announce layoffs, with some market experts suggesting that significant job reductions will occur in mid-2016.

With prolonged weakness, mining companies are turning more to innovative ways to squeeze profits and mine additional resources. Mining leaders indicate a requisite need to become innovative in delivering product to the market. Furthermore, there exists a need for technological advances to more efficiently mine resources. Companies which are capable of streamlining acquisition and obtainment will weather economic weakness.

“Just as, during the super cycle, people imagined prices would go up forever, people now imagine the market will never recover. Neither extreme represents the truth. What is true, however, is that our cycle times are lengthening. That means it could take years to adjust to current market forces—but it’s still a cycle.”

Phillip Hopwood, Global Leader – Mining,
Deloitte Touche Tohmatsu Limited

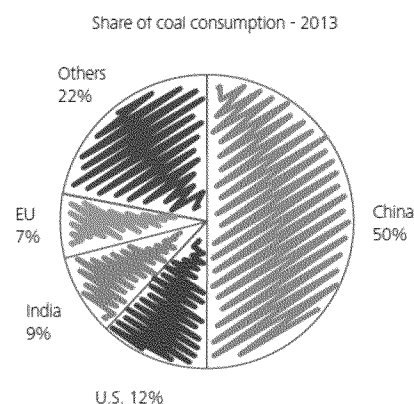
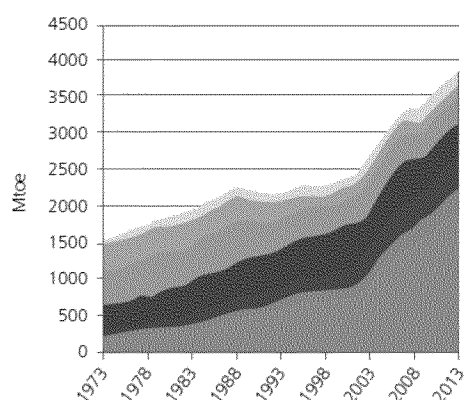
Additionally noted is the need for existing companies to better execute supply chain management policies. With tightened margins due to declining prices and increased efforts necessary to mine materials, it is imperative that getting goods to market happens in an expedited way. Numerous sources suggest the need for better rail and highway services. Environmental regulations that are being adopted in various countries (as well as within individual states in the United States) are resulting in increased scrutiny concerning distribution and distances that materials can travel.

According to the U.S. Energy Information Administration (EIA), fossil fuels will continue to supply 80% of world energy use through 2040, while approximately 56% of electricity in 2040 will come from these sources, with coal accounting for 31% of the mix. While coal is expected to lose market share worldwide to natural gas and renewables (including wind, solar, and biomass), dropping to roughly 20% of the total global energy mix by 2040, global demand for coal is nonetheless expected to grow to nine billion tons per year by 2019, growing an average of 2.1% per year.

“It’s interesting times in the mining industry; more interesting than many of us expected. China’s economic rebalancing is causing exceptional disruption. Commodity prices are taking much longer to recover than anticipated. To my mind, this makes innovation even more imperative. Rather than being optional, being bold may be the prerequisite to survival.”

Glenn Ives, Americas Mining Leader,
Deloitte Canada

China is attempting to reduce its usage of coal; however, its usage is anticipated to nonetheless grow by nearly half a billion tons by 2019, despite the anticipated economic weakness. The associated graphs highlight the impact of the Chinese market on the global coal industry, as well as the rising needs of India and other Asian countries. Coal use increased significantly in roughly 2003, as developing countries enjoyed more favorable economic conditions and expanded accordingly. Some leveling-off was noted during the financial crisis years, although that trend was short-lived prior to expansion until 2013. Since that time, coal has still been heavily demanded, although year-over-year increases have become more muted.



Global coal needs face an uncertain future, as more countries are requiring a greater dependence upon renewables and natural gas. Overall, while coal demand may subside, global needs for electricity will only continue to grow.

In terms of other materials, analysts are most bullish on a global recovery for nickel (which has seen drastic price declines) in 2016, while aluminum is predicted to struggle the most of products within the metals category. Continued weakness in the Chinese market has resulted in reduced global demand for aluminum.

“Although forecasts for global energy demand are not assured, one thing is certain: there will always be a need for electricity. That means mining companies should be asking which commodities will be required across the entire power generation value chain.”

Edith Alvarez, Mining Leader,
Deloitte Argentina

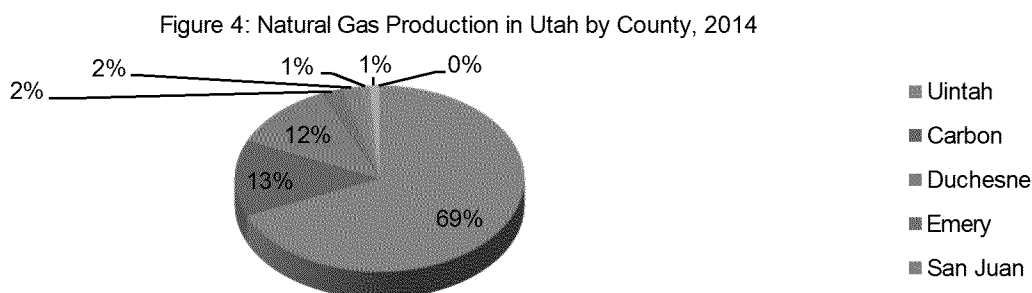
Nickel is estimated to experience price gains in 2016 as constraints limit supply, while copper is forecast to resume some price increases by the end of 2016, with the potential of three to four percent gains. Copper miners will see further production cuts, thereby reducing an already dwindling supply. Consequently, surplus contracts will fall to less than 100,000 tons. Finally, lead is forecast for continued struggles in 2016, as well as zinc.

Local/Utah Mining Trends

Overall, mining conditions for Utah are relatively similar to conditions noted for global and national markets. The depressed price of materials impacts production, and concerns about bringing product to market are furthermore present. Additionally noted for Utah is the impact of political pressures that influence the ability of regional and local mining companies to expand.

According to the Department of Energy, roughly 80% of the electricity generated in Utah comes from coal (as of 2015). Approximately 17 million tons of coal are produced annually, with sales in 2014 of \$570.8 million (from coal produced on Federal lands). Royalty revenues for the same period for coal were reported at \$41.1 million. The State produces roughly 1.5 to 2.0% of U.S. coal, with roughly 27% of that production being used out of State.

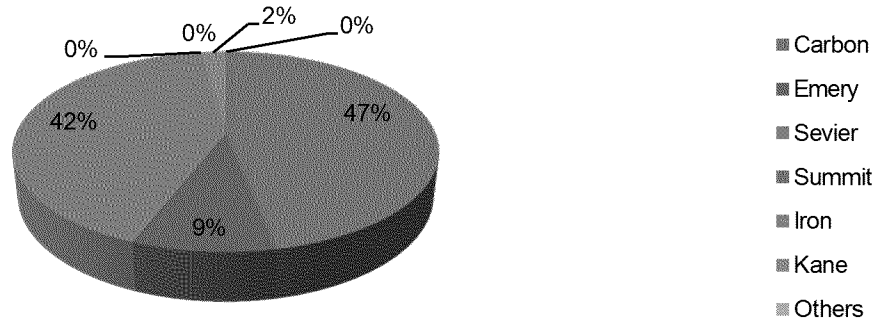
In terms of natural gas production in Utah, Uintah County is the largest producer, followed by Carbon County which produces 13.3 percent of all natural gas statewide. Emery County produces only 2.4 percent.⁸



⁸ 2015 production was not available

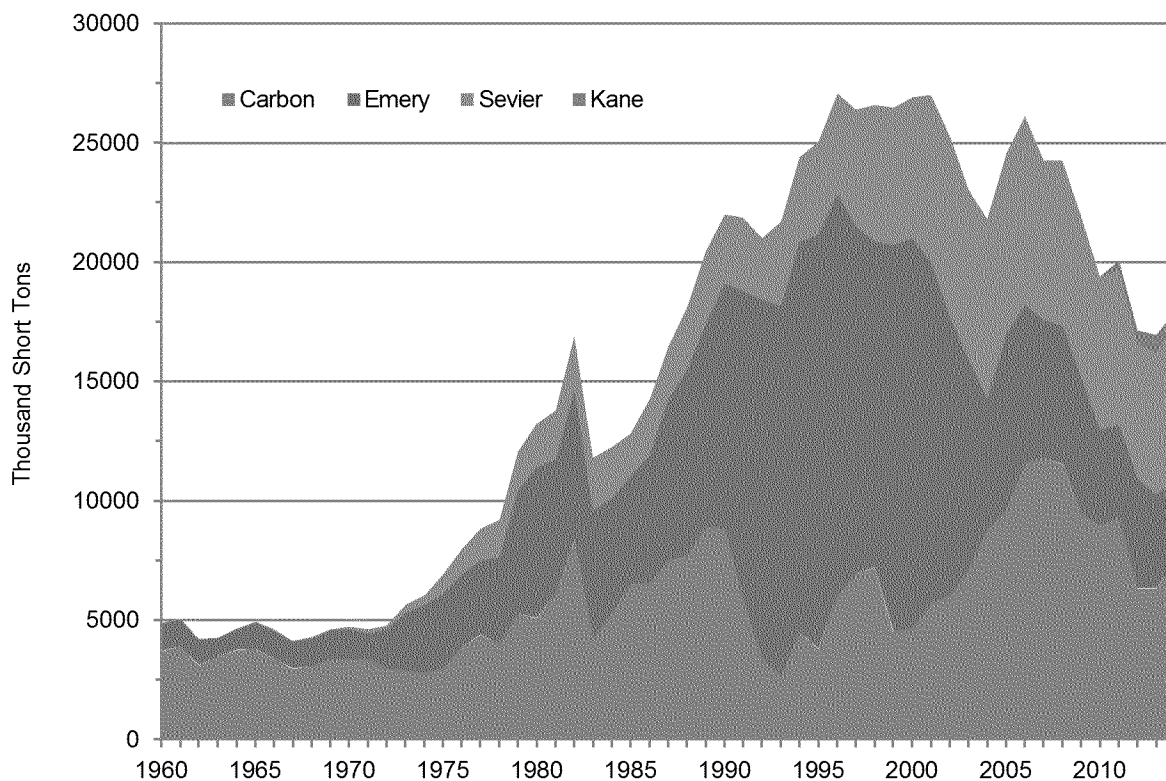
In terms of coal production statewide, Carbon County is the largest producer at 47 percent, followed by Emery County at 9 percent. Combined, the two counties account for 56 percent of all coal production in the State of Utah.

Figure 5: Coal Production in Utah by County, 2015



As noted by Figure 6, coal production in Utah is primarily contained within Carbon, Emery, Sevier, and Kane Counties. Each has followed patterns of production that largely mirror national trends, with highest production in the late nineties, followed by a few year correction, and then robust growth starting around 2003. More recent years following 2003 have shown some moderate declines in production, with all counties well below the levels produced roughly 15 to 20 years ago.

Figure 6: Coal Production in Utah by County 1960-2014 (Source: UGS/MHSA)



Coal production in Utah has decreased by 25 percent since 2010, with 2015 having the lowest production since 1986, in which 14,269 short tons were produced.⁹

Table 29: Utah Coal Production by County

Year	Carbon	Emery	Sevier	Kane	Total
2010	8,982	4,026	6,398	0	19,406
2011	9,281	3,891	6,498	403	20,073
2012	6,331	4,603	5,651	570	17,155
2013	6,326	3,921	5,959	747	16,953
2014	7,360	3,479	6,539	555	17,933
2015	6,752	1,331	6,024	327	14,434

Prices for crude oil in Utah are below national averages, while natural gas is typically higher (see Table 30). Overall, Utah had the 10th lowest average electricity prices in the nation in 2014 (the most recent data available).

Table 30: Energy Cost Comparison

Energy Type	Utah Cost	U.S. Average Cost
Domestic Crude Oil	\$36.70/barrel	\$42.30/barrel
Natural Gas (City Gate)	\$5.49/1,000 cu.ft.	\$4.00/1,000 cu.ft.
Coal	\$35.50/short ton	\$37.25/short ton
Electricity - Residential	10.58 cents/kWh	12.73 cents/kWh

Utah has seven operating mines that produce coal from roughly 71 leases, covering approximately 83,000 acres, according to the Department of Energy. Current projections suggest that the existing mines have roughly 15 years of reserves at the present rate of production (and using the existing methods of mining), while additional leasing could extend the life of Central Utah coal fields by 40 to 50 years, depending on coal prices. As of 2015, Carbon County had four of the state's seven coal mines, while Emery County had two coal mines.

Notable, however, is that new coal leases are presently prohibited, with the United States government placing a moratorium on such activity until the coal leasing program is better analyzed. Consequently, companies wishing to expand are presently



⁹ Source: Utah Geological Survey

required to postpone any plans of growth.

Utah energy consumption includes primarily coal and natural gas, with state projections anticipating a greater future reliance on natural gas. State leaders project a stronger reliance on renewables by 2050, with 20 to 35 percent of all usage coming from solar, wind, and biomass means (Envision Utah 2050).

Utah holds roughly 1.5 percent of the crude oil reserves for the United States (approximately 555 million barrels), while its crude oil production tripled from 2004 to 2014. Natural gas production in the State accounts for nearly 2% of U.S. output, with three of the largest 100 U.S. natural gas fields, ranked by proved reserves, found in Utah. The State consumes about half of the natural gas it produces, and generates more electricity than it consumes. Consequently, Utah is a net power supplier to other states. The largest power generating system in Utah was built for California use, and is anticipated to be fully converted to all natural gas production due to stringent California laws.

The local labor force (in Carbon and Emery Counties) has felt the impacts of weakness in the global and national mining markets. Roughly 150 mining jobs have been lost in Emery County in the past three years, while approximately 160 mining jobs have been lost in Carbon County since 2012.

Average monthly wages for mining jobs in Emery County have declined 24 percent in the past three years, as jobs at all levels have been lost due to closures and an inability to expand and continue operations (based on federal regulations in place at present). Conversely, average monthly wages for mining jobs in Carbon County have increased 31 percent since 2012. The exact reasoning for this is unknown; however, some speculate that it may be due to only lower level jobs having been lost, while management and executive positions have been maintained.

While not directly connected with Emery and Carbon Counties, the impact of Kennecott (Rio Tinto) is notable for the area. The large-scale miner intends for additional, significant layoffs in Utah in 2016 due to low copper prices and unfavorable mining conditions. It also anticipates that copper needs may not escalate until mid-2017. In early March 2016, Kennecott laid off 200 workers, resulting in a total of nearly 300 since the end of 2015. More layoffs are planned for 2016's second quarter.

Occupational and Skills Analysis

Several businesses in the two counties were contacted to understand their current and future workforce needs. The businesses contacted include the following:

- Castlevue Hospital
- Utah State University – Eastern
- Nielson Construction
- Canyon Fuels Company
- Intermountain Electronics
- Joy Technologies
- Pinnacle Canyon Academy
- Savage Industries
- Sorenson Communications
- West Ridge Resources
- Castle Valley Mining
- Emery County School District
- Energy West Mining Company
- PacifiCorp
- SOS Staffing Services
- Tram Electric
- Union Pacific Railroad
- Utah Railway Company
- W. W. Clyde
- Emery Telcom
- Bodec, Inc.
- Carbon County School District
- Conoco Phillips Company
- Electrical Contractors, Inc.
- Jacobsen Contractors
- Longwall West
- Love Less Ash Company
- Swanson Industries
- Nelco Contractors
- Renegade Industrial
- Utah American Energy
- Industrial Electric
- Conductive Composites
- XTO Energy

Findings from these interviews are grouped into four categories:

- Missing Skills in the Workforce
- Available Workforce Training
- Current and Future Employment Needs, and
- Opportunities for Job Growth.

Missing Skills in the Workforce

Employers indicated that, on average, only 45 percent of applicants from the local area have the skills, training, certificates, or degrees required for the position for which they are applying. Many of the businesses indicated the applicants and employees lack soft skills, including communication (both written and verbal), initiative, and self-reliance.

While some of the skills lacking, like a strong work ethic, cannot be taught in

a classroom or other work setting, other skills can. Some of the skills lacking include:

- Communication (written and verbal)
- Computer and technology
- Technical programs (e.g., welding, machine shop, electrical, etc.)
- Management

“Although we have ultimately been successful, it has been difficult to hire locally because many of the applicants lack essential soft skills, primarily written and verbal communication skills.”

Available Workforce Training

Because many applicants lack some of the skills required for their position, most of the businesses indicated that because they are in demand for workers, they conduct on-the-job training to train new employees the skills required for their position. Furthermore, several businesses indicated that they work in conjunction with USU Eastern to provide training, certification, and continued education for their employees. However, when asked about the Center for Workforce Development, most of the businesses indicated that they either did not know the role and purpose of the Center, or that they knew about the Center but did not have a working relationship with the Center. This may be a result of several factors:

- Businesses associate training courses with USU Eastern and not the Center for Workforce Development; and
- The individuals interviewed were not familiar with the Center, but that may not be reflective of the entire business and others more directly associated with the training programs.

Current and Future Employment Needs

Businesses in the area have a variety of current and future employment needs. Some of these needs are outlined below:

Table 31: Current Employment Needs and Requirements

Industry	Employment Needs	Required skills, training, degrees, or certifications
Education	Building Maintenance	No degree, license, or certification required (unless working with asbestos), specialized skills and experience in HVAC, electrical, plumbing, building construction, or auto maintenance preferred
Education	CTE Instructor	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Custodian	None
Education	School Administrator	Utah School Administrator/Supervisor License, Master's Degree in School Administration
Education	Special Education Teacher	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Speech and Hearing Teacher	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Teachers(Art, Geography, Math, Music, Science)	Bachelor's Degree, Teaching License, subject-specific endorsement
Education	Teaching Assistant	Associates Degree, ParaPro Assessment Test
Healthcare	Nurse	Degree in Nursing and licensure
IT	Programmer	Technical training
IT	Web Designer	Technical training
IT	Database Engineer	Technical training
Oil, Gas & Mining/Manufacturing	Apprentice Electrician	None, electrical training preferred
Oil, Gas & Mining/Manufacturing	Electrical Engineer	Degree in Electrical Engineering
Oil, Gas & Mining/Manufacturing	Journeyman Electrician	Electrician Certification
Manufacturing	Chemical Engineer	Degree in Chemical Engineering
Professional, Scientific, &	Communications Assistant (entry-level position)	Type 30 WPM, pass entry-level dictation exam

Industry	Employment Needs	Required skills, training, degrees, or certifications
Technical Services		
Utilities/Energy	Power Plant Manager	Management experience
Utilities/Energy	Utility Workers	None

Electrical

Mining companies, mining-support companies, and manufacturers indicated a need for electricians, both apprentice and journeymen, and electrical engineers. Due to the training nature of electrician apprentices, there typically needs to be one journeyman electrician for each apprentice. Apprentices don't require any previous training, though it is preferred, and journeymen must have an electrician certification. Electrical engineers must have a degree in electrical engineering.

Information Technology

Positions needed within information technology range from communications assistants (call center agents), to inside sales and programmers. Call center agents must be 18 years old and must have specific communications and computer skills. Programmers primarily need experience with JavaScript.

Education

Schools in Carbon and Emery are in need of teacher's assistants, teachers, and administrators, each of which requires a degree and licensure. Specific areas of need include elementary education, art, geography, math, music, science, special education, and speech and hearing. The school districts also have need of custodians and other building maintenance personnel. While no degree, license, or certification is required for these positions (unless working with asbestos), specialized skills and experience in HVAC, electrical, plumbing, building construction, and auto maintenance are preferred.

Other Entry-level Technical Positions

Many businesses, including manufacturers and mining support industries, indicated a constant need for entry level positions. Though having experience in technical areas, including welders and machinists, is preferred, many of the skills can be taught on the job.

Opportunities for Job Growth

As noted previously, Carbon and Emery historically have relied heavily on the coal mining industry for employment. This emphasis on coal mining has adversely affected this area as mines have closed and a moratorium has been placed on renewing coal leases, resulting in significant decreases in employment. One business interviewed indicated that, "We are not seeing the same demands as years past for heavy construction or mining equipment needs in southeastern Utah.

The political climate is not advantageous, but the potential is still quite exciting." Furthermore, a population that is not only declining, but also aging, has contributed to a lack of qualified employees for local businesses. Creating a diversification of industries will provide a variety of employment opportunities for residents, which will better sustain fluctuating market conditions.

"We are not seeing the same demands as years past for heavy construction or mining equipment needs in southeastern Utah. The political climate is not advantageous, but the potential is still quite exciting."

There are several opportunities for job growth in a variety of industries that could be pursued in Carbon and Emery counties. These industries include:

- Other Mining
- Information Technology
- Manufacturing/Re-manufacturing
- Supply Chain Management, Logistics, and Delivery Systems
- Warehousing and Distribution
- Energy
- Education
- Healthcare
- Tourism and Other Non-basic industries

Other Mining

Carbon and Emery counties are known for their coal, natural gas, and oil mines; however, two other potentially high-value commodities exist at unique levels within the study area: helium and carbon dioxide. Each of these resources has been identified to be commercially relevant and potentially financially feasible to extract.

Carbon dioxide in Carbon County has been a known resource in the area since drilling for oil began around 1900. The carbon dioxide exists primarily in the Navajo Sandstone layer but is also found in other layers within the two-county region. Two man-made, CO₂ influenced geysers have been created by drilling activities. One is Crystal Geyser south of Green River, and the other is at Woodside, near the Price River. The reserves at Farnham Dome, as well as another known reserve near Gordon Creek in Carbon County, are approximately 99% CO₂. Other reserves in the two-county area are lower in purity with the balance consisting of helium and nitrogen. Helium is a valuable resource, but nitrogen can be difficult to separate. These additional reserves are located near Sunnyside, Woodside and Green River.

Commercial development of the CO₂ resource began in the early 1930s at Farnham dome, 3 miles east of Wellington. This resource operated a dry ice facility that ran until about 1980. After the closure of the facility, the resource was unused until the wells were re-opened in the early 2000s and a CO₂ plant was built near Highway 6, west of East Carbon. This facility produces high-grade CO₂ for the food industry as well as commercial CO₂ for industrial uses. The operators of the field believe there is in excess of 1 trillion cubic feet of recoverable CO₂ reserves in the deposit near Farnham Dome. The existing CO₂ facility is located adjacent to rail service and US Highway 6. A pipeline to haul CO₂ has been proposed between Wellington and the Uintah Basin to use for drilling and well stimulation projects for crude oil and natural gas.

Helium is another unique resource in the area with significant commercial potential. Two companies are currently in various stages of development of helium wells and one has drilled a successful well in Emery County. The helium resource is a world class reserve, with helium concentrations significantly higher than most underground sources. The federal government identified the resource in the early 20th century and reserved the majority of the reserves as a part of the National Helium Reserve for military purposes. As this program is phased out, the federal government still maintains control of much of the reserve and leases for the product have to be negotiated with the BLM. As Helium becomes more scarce, commercial opportunities will continue to develop. The resource in Carbon and Emery counties will be very attractive because of the shallow depth to formation as well as the high concentrations of supply.

If the helium and CO₂ mining industries continue to develop in the area, many jobs could be created in the short- and long-term. Short-term, approximately 50 positions would be needed for the construction and drilling of the facilities. Once construction has completed, approximately 12 jobs per facility would be needed for operations, most of which would be low-skilled positions (e.g., labor, technician, transportation), with 3 to 4 high-skill positions in engineering and management.

Another mining-related industry that could have potential in Carbon and Emery counties is coal conversion to clean diesel natural gas. Coal mined in Carbon and Emery counties is cleaner than many other coals, and therefore can be converted to other forms of energy. Though having sufficient water to run the facility may be an issue, local officials are optimistic that this industry will soon come to the area and create 200 jobs to complete the construction of the facility over a few years, with approximately 60 jobs once construction is completed. While many of these positions will be entry-level, there will be a significant need for chemical engineers.

Information Technology

Businesses indicate a need for more tech jobs in the local area. The Gardner Policy Institute at the University of Utah forecast a total of 6,000 new tech jobs statewide by 2025. Due to the technical nature of these positions, they will go to areas with a skilled labor force. Furthermore, the Institute estimates there are roughly 3,500 tech job openings at present, most of which are being filled in Utah County.

Accelerant is a business based in Salt Lake City which creates local jobs and partners with various businesses to train rural residents for the specific skill sets that urban employers need in technology, information, sales, marketing, and professional service sectors. Accelerant provides IT support positions for several local and national businesses, including Walmart, Dowdle Folk Art, and Tatt2Away. Accelerant focuses on training and placing individuals within one of four tiers:

- Tier 1: Sales, Administrative Support, Customer Service
- Tier 2: Creative and Design
- Tier 3: Programming, Developer Ops, Data Science
- Tier 4: Strategy, Administration, Management

During initial rollout, Accelerant anticipates a need for 50 inside sales jobs, with that number increasing to approximately 100 within the next year. Within 6 months of operations beginning in Price, Accelerant anticipates the need for 50 IT jobs, with that number also increasing over time. Accelerant estimates there are currently 300 people in Carbon County that are predisposed to IT jobs, but that there is a significant lack of jobs for these individuals. To train these individuals, Accelerant plans to work with USU Eastern to provide a 12-14 week boot camp training to train individuals in the required IT skills, primarily Java Script (including Node and Angular).

Manufacturing/Re-manufacturing

There are several manufacturing opportunities that could be pursued in Carbon and Emery counties. Composites are a growing industry in Utah and some businesses have already located in the study area. Conductive Composites, for example, is a company that creates composites coated in nickel which makes the material electrically conductive. In 2015, Carbon Composites relocated their Green River facility to Cleveland in Emery County. The facility includes two manufacturing lines, though only one is operating at this time. Conductive Composites anticipates the second line will be operational within the next few weeks, at which point both lines will be operationally 24 hours per day, 6 days per week. The increase in production will require an

additional five employees (a mixture of line operators, quality assurance, and maintenance). The facility currently employs 10 individuals (6 line operators, 1 maintenance technician, 1 quality assurance technician, 1 chemical engineer, and 1 plant manager). The facility consumes large amounts of industrial gasses, some of which they produce while others they purchase from providers. There are opportunities for support businesses, including industrial gas providers, to relocate near the Conductive Composites facility. The relocation of support businesses would be beneficial as they also serve the mining and energy industries in the area.

The success of Conductive Composites in Emery County indicates the potential for other manufacturers to locate to the area. Other manufacturing opportunities include plastics and food manufacturing. While many businesses in the State of Utah use plastic pellets in their manufacturing processes, the State lacks a plastic pellets manufacturer. The addition of this industry would create many low- and high-skilled jobs, including chemical engineers, quality control, and management.

Supply Chain Management, Logistics, and Delivery Systems

Mining related businesses in the area have expressed concerns about changing needs in the industry and how product is delivered to market. Some employers and consultants indicate that upgrades need to be made in terms of product management, logistics, and supply chain management. Furthermore, they indicate that some of southeastern Utah lacks a skilled workforce that adapts to changes in market influences. One business indicated, "We have certainly witnessed a shift in recent years for mining transportation needs (in south eastern Utah). There is an absence of technology and transit means to bring product to market in a quicker, more efficient way. Regulations are such that it is becoming less cost effective to ship coal outside of the state."

Several companies report a need for more stream-lined transportation means to bring products to market. Supply chain management and product delivery are key in an evolving and cyclical mining industry. To address these concerns, transportation engineers and supply chain managers are in need in southeastern Utah, according to several sources. New systems for delivery, as well as more efficient rail use and connections to suppliers, are requisite.

"We have certainly witnessed a shift in recent years for mining transportation needs (in southeastern Utah). There is an absence of technology and transit means to bring product to market in a quicker, more efficient way. Regulations are such that it is becoming less cost effective to ship coal out of state."

Warehousing and Distribution

Improvements to infrastructure and supply chain management could also provide opportunities for warehousing and distribution centers. Green River is a potential site for warehousing and distribution centers due to its location along I-70 and railroad access, as well as an abundance of vacant land. Price could also serve as a warehousing and distribution site. Improvements to Highway 6 have improved the access to Price; however, the railroad infrastructure in Price would need some upgrades, but repurposing the current infrastructure would cost less than having to build a new railroad infrastructure.

Energy

The Bluecastle Project is a proposed 3,000 MW nuclear generating facility to be located at Green River, in Emery County. The project has selected a site, secured water, initiated the Nuclear Regulatory Agency permitting process, initiated required environmental and economic studies and is working through issues such as transmission and long term purchase agreements for power. There is a minimum of 4 years remaining on the permitting process, so construction is not expected to begin until at least 2020.

During construction, peak employees on site could exceed 1,500. Typically, there will be a crew of 300 to 500 during the life of the construction, which is anticipated to last approximately 7 years.

The management team of Bluecastle is proposing a facility that will permanently employ between 700 and 900 employees upon completion of the facility, including support, contract and other personnel. Because of the unique nature of the positions, anticipated wages for the facility will be significantly above the county average wage. Nuclear Engineers, Electrical Engineers, and management employees will all have starting wages likely above \$90,000 per year and many will be significantly above this. Based on other operating facilities, this top tier will include approximately 100 employees.

The next tier of key personnel is related to security and safety. This group will be between 150 and 200 employees and wages will be in the \$70,000 to \$100,000 range. Many of these employees will come from retired military and other government experience pools.

Control room operators and other “traditional” power plant staff wages will be driven by the job market. Currently, these positions start around \$50,000 per year and top out around \$90,000. Approximately 200 employees will fall into this group.

Basic maintenance, service, janitorial, accounting and other business services will include both employees and contractors. It will include 200 or more employees that will make between \$40,000 and \$60,000 per year.

It is anticipated that the employees will live, not just in Green River, but in the communities throughout the region. The communities of Price, Wellington, East Carbon, Ferron, Emery and Moab are all expected to have significant numbers of employees.

Education

Traditional teaching paths have experienced declining enrollment statewide, a trend that started in 2011. Despite having higher wages, rural communities are expected to have more teacher shortages for the next several years,¹⁰ as many rural school districts find it difficult to attract teachers from the Wasatch Front to fill positions, or retain graduates from USU Eastern. The most significant educational needs are for elementary education, as well as fields of art, geography, mathematics, music, science, special education, and speech and hearing.

Table 32: Average Teacher Salary Comparison (Source: CACTUS (Educator Licensing) Database)

	Carbon	Emery	State
Average Teacher Salary	\$45,736	\$48,902	\$46,689
Average Teacher Salary with Benefits	\$80,580	\$85,489	\$76,664

¹⁰ U.S. Office of Education

Furthermore, there is also a substantial issue in teacher retention. A 2015 report by the U.S. Department of Education reported that of teachers that began teaching in 2007-2008, 12 percent did not teach in 2008-2009, 12 percent did not teach in 2009-2010, 15 percent did not teach in 2010-2011, and 17 percent did not teach in 2011-2012.¹¹

Healthcare

Many individuals have indicated that the lack of diversity in the available providers in Carbon and Emery counties, coupled with a gap between the available providers and the providers which are covered by insurance providers, causes some individuals to seek healthcare outside of the area. This leakage indicates the potential for additional healthcare jobs in the area. However, plans for a new Intermountain Healthcare hospital in Spanish Fork may diminish, but not completely meet, the need for healthcare jobs in Carbon and Emery counties. The current demand for healthcare positions in the area include certified nursing assistants, licensed practical nurses (though the industry is moving away from this position), nurses, and medical technologists.

Tourism and Other Non-basic Industries

While there is potential for non-basic industries, including tourism, service-related, and retail businesses, in the area, these businesses will likely grow as the basic industries grow.

¹¹ Source: U.S. Department of Education

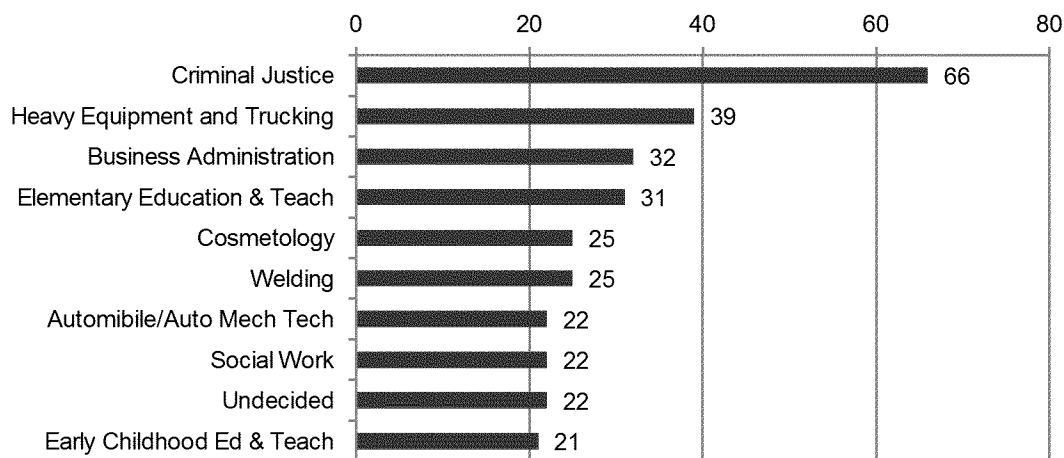
Educational and Skills Trends

There are multiple avenues for individuals to receive skills training in Carbon and Emery counties, including USU Eastern, the Center for Workforce Development, as well as through CTE programs through the local school districts and charter schools.

USU Eastern

For the 2015-2016 academic year, there are more than 1,600 students enrolled in various programs. Figure 7 shows the programs with the most enrollees between 2012 and 2015.¹² The programs with the most enrollees during this period include Criminal Justice, Heavy Equipment and Trucking, Business Administration, and Education.

Figure 7: USU Eastern - Total Program Enrollment (2015-2016)



Figures 8 and 9 show how enrollment has changed over the last 3 years, with Figure 8 displaying programs that have experienced an increase in enrollment and Figure 9 showing programs that have had a decrease in enrollment. Programs with an increase in enrollment include Education, Business Administration, and Criminal Justice, while Cosmetology, Nursing, Liberal Arts and Science, and Welding have decreased the most.¹³

¹² Only includes enrollees that have declared a major; therefore, it does not include enrollees listed under general studies, undeclared, non-degree seeking enrollees, or pre-programs. Students that are taking courses toward a major but have not declared a specific major are not included.

¹³ Does not include general studies, undeclared, or non-degree seeking enrollees

Figure 8: Enrollment Increase (2012-2015)

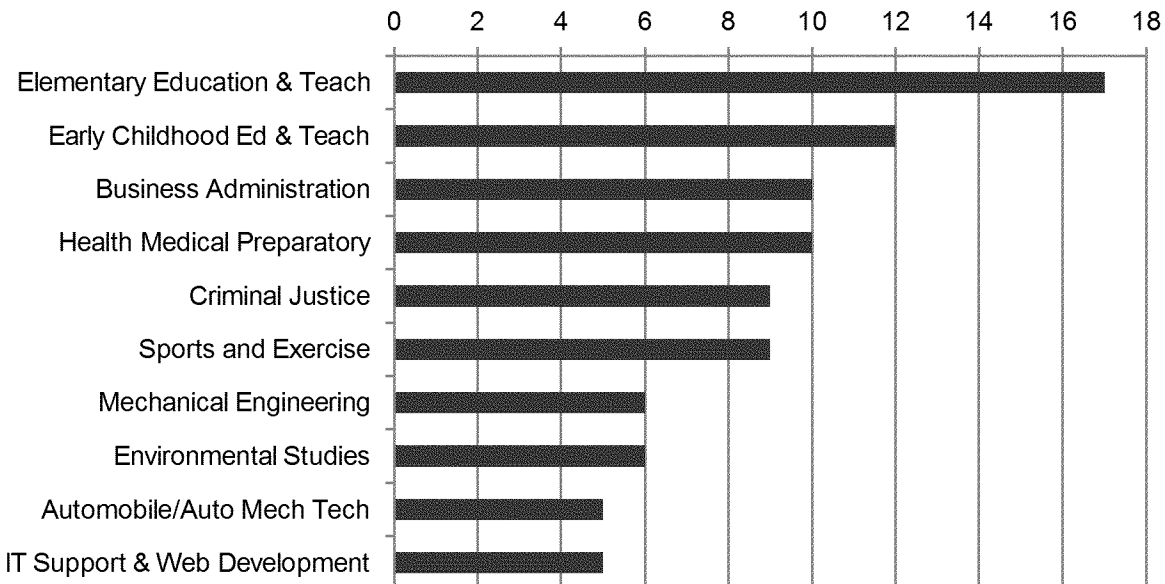


Figure 9: Enrollment Decrease (2012-2015)

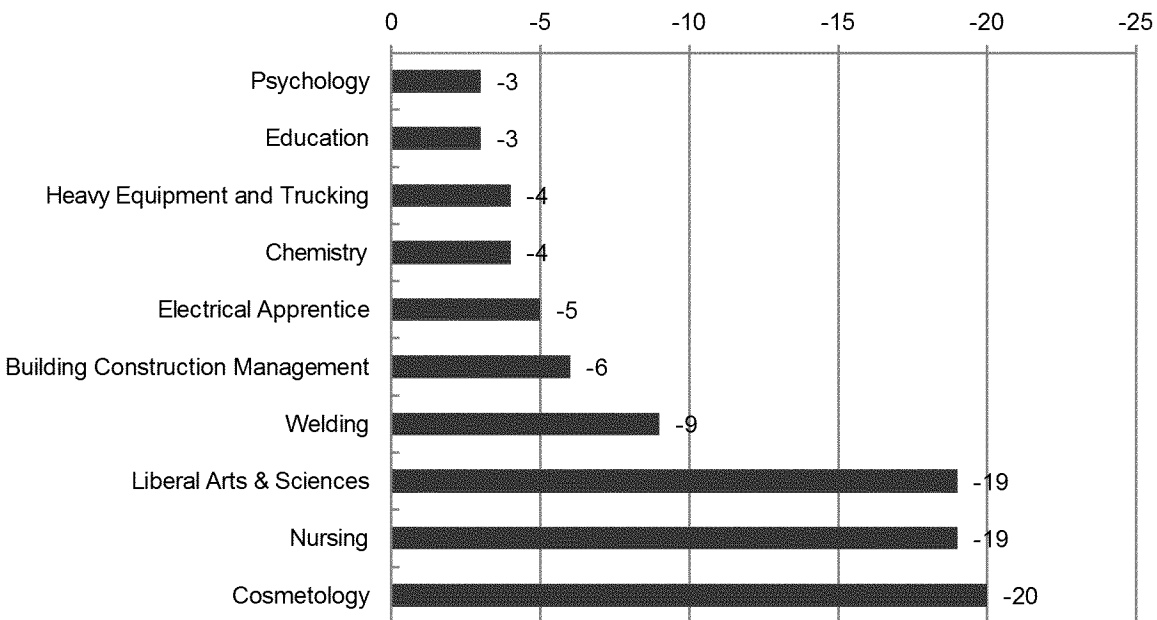


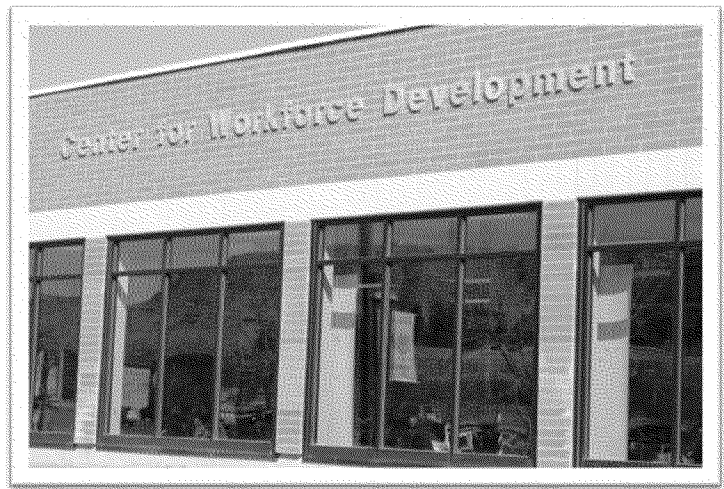
Table 33 aggregates programs based on their industry. Many of the programs for which there is an employment need in the local industry have experienced a decrease in enrollees since 2012. Education, on the other hand, has a large significant number of enrollees and has had enrollment growth since 2012. A complete list of these industries and the programs included in each industry is included in the Appendix.

Table 33: Enrollment of Industry Needs

Industry	Total Enrollees (2015-2016)	Change (2012-2015)
Construction	0	-6
Education	55	26
Electrical	4	-9
Engineering	17	7
Heavy Equipment and Trucking	60	6
IT	17	2
Machinist	5	-1
Medical	52	-2
Mining	0	0
Welding	25	-9
Grand Total	235	14

Center for Workforce Development

The Center for Workforce Development (CWD) offers a variety of courses and programs to prepare students to be successful in various careers. The intentions of students vary, including high school students obtaining CTE credit, high school graduates seeking training for a specific skill or trade, working professionals looking to upgrade their skills and enhance job security, partnerships and businesses to train employees, and individuals taking courses out of personal interest.



From 2013 to 2015, the CWD has had between 220 and 265 high school students enrolled in courses. The programs that have the greatest number of students have been Automobile (79 to 161 students), Computer Programming (45 to 74 students), and Welding (28 to 41 students).

Table 34: Center for Workforce Development High School Student Enrollment (2013-2015)

Program	2013-2014	2014-2015	2015-2016 (To Date)
Accounting	0	0	0
Automobile	161	79	88
Building Construction	16	10	6
Business Admin Support	0	0	0
Certified Nursing Assistant	2	0	0
Computer Applications	0	0	0
Computer Programming	45	74	73

Program	2013-2014	2014-2015	2015-2016 (To Date)
Drafting	0	29	9
Electrical Recertification	0	0	0
EMT	0	0	0
First Aid/CPR	0	0	0
New Miner Training	0	0	0
Mining Annual Refresher	0	0	0
MSHA Trainer	0	0	0
Welding	41	28	14
Total	265	220	190

There is a greater variety in the courses that adult students take at the CWD compared to high school students. Major programs based on the number of adult enrollees include Business Admin Support (47 to 92 students) and Computer Applications (22 to 54 students).

Furthermore, many adult students of the CWD are enrolled for training required by the Mine Safety and Health Administration (MSHA). In 2014, 239 adults, or 55 percent of all adult students, were enrolled in MSHA trainings offered by the CWD. Additionally, 48 students in 2014 were enrolled in the Electrical Recertification program.

Table 35: Center for Workforce Development Adult Enrollment (2013-2015)

Program	2013-2014	2014-2015	2015-2016 (To Date)
Accounting	2	0	1
Automobile	10	0	0
Building Construction	0	0	0
Business Admin Support	92	47	56
Certified Nursing Assistant	18	25	0
Computer Applications	54	22	4
Computer Programming	0	0	0
Drafting	0	0	0
Electrical Recertification	43	48	67
EMT	3	0	2
First Aid/CPR	73	54	0
MSHA New Miner Training	119	54	44
MSHA Mining Annual Refresher	195	174	94
MSHA Trainer	4	11	13
Welding	0	0	0
Total	613	435	281

The total enrollment by program is shown in Table 36. In 2014, 36 percent of all students were enrolled in mining training courses, 12 percent in Automobile, and 11 percent in Computer Programming.

Table 36: Center for Workforce Development Total Enrollment (2013-2015)

Program	2013-2014	2014-2015	2015-2016 (To Date)
Accounting	2	0	1
Automobile	171	79	88
Building Construction	16	10	6
Business Admin Support	92	47	56
Certified Nursing Assistant	20	25	0
Computer Applications	54	22	4
Computer Programming	45	74	73
Drafting	0	29	9
Electrical Recertification	43	48	67
EMT	3	0	2
First Aid/CPR	73	54	0
New Miner Training	119	54	44
Mining Annual Refresher	195	174	94
MSHA Trainer	0	0	13
Welding	41	28	14
Total	878	644	471

Because the intentions of students varies, with not all looking to complete certification in a field, Table 37 shows the number of students that received certifications in various programs and the certification rate of all students in each program. In 2014, 70 percent of certifications completed through the CWD were mining related, with another 14 percent for Electrical recertification.

Table 37: Center for Workforce Development Total Certifications (2014-2015)

Certification	Total Certifications 2014-2015	Percent of Certifications 2014-2015	Total Students 2014-2015	Certification Rate 2014-2015
American Red Cross First Aid/CPR	25	7%	54	46%
ASE Automotive Technician	0	0%	79	0%
Certified Nursing Assistant	24	7%	25	96%
Customer Service Specialist	0	0%	47	0%
Electrical Recertification	48	14%	48	100%
EMT	0	0%	0	NA
Microsoft Office Certification	6	2%	22	27%
MSHA New Miner Certification	54	16%	54	100%
MSHA Miner Annual Refresher Certification	174	51%	174	100%
MSHA Trainer Certification	11	3%	11	100%

Certification	Total Certifications 2014-2015	Percent of Certifications 2014-2015	Total Students 2014-2015	Certification Rate 2014-2015
Total	342	100%	514	67%

Carbon and Emery School Districts

In addition to partnering with the USU Eastern and the Center for Workforce development to provide CTE credits and training, Carbon and Emery School Districts provide additional CTE courses to provide skills training for students. As noted in the CWD enrollment statistics, students from Carbon and Emery School Districts who are enrolled in CDW courses are included in the CWD numbers.

Carbon School District

Enrollment in CTE and concurrent enrollment programs in Carbon School District increased from 2014 to 2015, without major changes in the percent of students enrolled in each program. In 2015, 23 percent of course enrollments were in technology courses (e.g., Information Technology, Exploring Technology), and 16 percent were other skilled trades (e.g., Carpentry, Construction, Engineering, Transportation and Energy, Natural Resource Sciences, Welding, and Woodwork). Overall, 830 students are enrolled in CTE courses, with a cumulative enrollment for all CTE courses of 2,217, students enrolled in CTE courses were, on average, enrolled in 2.67 CTE courses.

Table 38: Carbon School District CTE Enrollment (2014-2016)

Pathway	2014-2015	2015-2016	% of Students 2014	% of Students 2015	Change
Accounting	122	98	6%	4%	-1%
Agricultural Communication	0	10	0%	0%	0%
Animal Science	59	69	3%	3%	0%
Architectural Design 2	9	0	0%	0%	0%
Automotive	34	17	2%	1%	-1%
Barbering	36	0	2%	0%	-2%
Business	51	60	2%	3%	0%
Career Orientation & Exploration	88	0	4%	0%	-4%
Carpentry 1	18	0	1%	0%	-1%
Child Development	86	96	4%	4%	0%
Clothing and Textile 1	161	22	7%	1%	-6%
Construction Trades Foundation	22	0	1%	0%	-1%
Cosmetology	36	0	2%	0%	-2%
CTE Internships	32	74	1%	3%	2%
Economics	43	23	2%	1%	-1%
Engineering Design	29	27	1%	1%	0%
Entrepreneurship - Marketing	23	72	1%	3%	2%
Equine Science - Year	0	17	0%	1%	1%

Pathway	2014-2015	2015-2016	% of Students 2014	% of Students 2015	Change
Exercise Science / Sports Medicine	34	23	2%	1%	-1%
Exploring Technology	1	0	0%	0%	0%
FACS Exploration	1	0	0%	0%	0%
Floriculture	42	103	2%	5%	3%
Food and Nutrition	229	215	10%	10%	-1%
Health Science	47	0	2%	0%	-2%
Information Technology	402	515	18%	23%	5%
Interior Design	52	126	2%	6%	3%
Introduction to Construction Technology	26	0	1%	0%	-1%
Introduction to Transportation & Energy	1	0	0%	0%	0%
Law Enforcement	10	0	0%	0%	0%
Leadership Management Principles	0	13	0%	1%	1%
Marketing	124	193	6%	9%	3%
Natural Resource Science 1	58	76	3%	3%	1%
Network+	5	0	0%	0%	0%
Pre-engineering	19	20	1%	1%	0%
ProStart I	18	19	1%	1%	0%
Screen Printing Technology	63	54	3%	2%	0%
Technical Design 1	36	23	2%	1%	-1%
Television Broadcasting 2	31	26	1%	1%	0%
Welding Technician - Entry Level	32	25	1%	1%	0%
Woodworking	113	201	5%	9%	4%
Grand Total	2,193	2,217	100%	100%	1%

Emery School District

Although CTE enrollment in Emery County decreased between 2014 and 2015, the decreases seem to have been across the board, with very little change in percent of CTE students in each program. Courses related to technology (e.g., Computer Technology, Desktop Publishing, Digital Business Applications, and Exploring Technology) comprised 19 percent of all enrollees in 2015, and 22 percent were in other skilled trades (e.g., Cabinet Making and Millwork, Carpentry, Construction, Manufacturing, Transportation and Energy, Machining, Manufacturing, and Welding).

Emery School District reported that in 2016, 16 students found employment after high school as welders or machinists, but that in 2015 only 5 students were placed into jobs after graduation (in various industries). Furthermore, the District indicated that every year they have numerous students that participate in internship programs, primarily in the healthcare, veterinarian, and education industries.

Several changes have occurred to the CTE program at Emery School District, including one pathway (Materials & Manufacturing) which was cancelled due to the lack of qualified staff to teach the course, and the Automotive pathway which has recently been taught by an adjunct instructor. A new full-time instructor will be hired next year to teach the Automotive and Science, Technology, Engineering, and Math (STEM) classes. The District began Law Enforcement courses this year, at the request of the local Sheriff's department, and is working with USU Eastern to begin a Mechanics and Repairs pathway next year.

Table 39: Emery School District CTE Enrollment (2014-2016)

Pathway	2014-2015	2015-2016	% of Students 2014	% of Students 2015	Change
Accounting	22	26	1%	2%	1%
Adult Roles and Responsibilities	13	6	1%	0%	0%
Agricultural Communication	9	9	1%	1%	0%
Animal Science	138	108	9%	9%	0%
Architectural Design	39	17	3%	1%	-1%
Automotive	123	46	8%	4%	-4%
Business Communication	12	4	1%	0%	0%
Cabinet Making and Millwork	25	17	2%	1%	0%
Carpentry	16	13	1%	1%	0%
Child Development	23	22	1%	2%	0%
Clothing and Textile	56	70	4%	6%	2%
Computer Technology	178	134	11%	11%	-1%
Desktop Publishing	59	32	4%	3%	-1%
Digital Business Applications	8	15	1%	1%	1%
Entrepreneurship	28	10	2%	1%	-1%
Exploring Technology	63	50	4%	4%	0%
Floriculture	59	31	4%	3%	-1%
Food and Nutrition	155	125	10%	10%	0%
Interior Design	23	25	1%	2%	1%
Introduction to Construction Technology	42	23	3%	2%	-1%
Introduction to Manufacturing Technology	79	78	5%	6%	1%
Introduction to Transportation & Energy	57	45	4%	4%	0%
Keyboarding	91	109	6%	9%	3%
Law Enforcement	0	7	0%	1%	1%
Leadership Management Principles	10	-	1%	0%	-1%
Machining	20	12	1%	1%	0%
Materials & Manufacturing Processes	13	-	1%	0%	-1%

Pathway	2014-2015	2015-2016	% of Students 2014	% of Students 2015	Change
Technical Design	22	46	1%	4%	2%
Welding Technical Entry Level	43	34	3%	3%	0%
Welding Technology Advanced	58	45	4%	4%	0%
Workplace Skills	76	72	5%	6%	1%
Grand Total	1560	1,231	100%	100%	0%

Pinnacle Academy

Pinnacle Academy, a private school in Price, allows high school students to enroll in any course offered at USU Eastern or the Center for Workforce Development; therefore, students enrolled in programs through USU Eastern or the CWD are included in their enrollment numbers.

Employment Needs and Available Workforce Gap

In 2015, there were 1,889 jobs postings in Carbon and Emery counties on the Department of Workforce Services website. Of the total postings, 1,690, or 89 percent, were in Carbon County. Table 40 shows a list of all the postings by industry.¹⁴

Table 40: 2015 Job Postings by Industry (Source: Department of Workforce Services)

Industry	Carbon	Emery	Total
Administration and Support, Waste Management and Remedial Services	434	10	444
Retail Trade	209	37	246
Health Care and Social Assistance	210	20	230
Public Administration	164	22	186
Educational Service	120	1	121
Accommodation and Food Services	104	13	117
Transportation and Warehouse	93	13	106
Construction	51	18	69
Finances and Insurance	50	12	62
Other	38	13	51
Wholesale Trade	37	6	43
Agriculture, Forestry, Fishing and Hunting	30	9	39
Professional, Scientific and Technical Services	30	8	38
Mining	34	0	34
Other Services	28	3	31
Manufacturing	23	2	25
Real Estate, Rental and Leasing	21	0	21
Utilities	6	11	17
Information	5	1	6
Management of Companies and Enterprises	3	0	3
Total	1,690	199	1,889

Based on job titles, in 2015 there was a significant need for positions within key industries for the area. For example, there were 65 electrical-related positions in 2015, 132 construction-related positions, and 169 truck driver positions. Notably, there were only 17 IT positions posted in 2015. Despite few open positions, industry growth indicates great potential for this industry in this area.

¹⁴ Industries are based on NAICS codes. Because businesses self-identify their NAICS code, there may be discrepancies among the industries. Furthermore, this includes all postings and does not account for multiple postings for the same position. Based on the current structure, DWS does not have the means to account for duplicate postings as businesses can repost for the same position each month.

Table 41: 2015 Job Postings by Title (Source: Department of Workforce Services)

Job Title	Carbon	Emery	Total
Education	84	3	87
Teacher	58	2	60
Education Administrator	4	1	5
Counselors	12	0	12
Teacher Assistant	10	0	10
Electrical	65	0	65
Electrician	46	0	46
Electrical Engineer	6	0	6
Other Electrical (Repair, Assemble)	13	0	13
Engineers	17	0	17
Operating Engineers	13	0	13
Civil Engineer	1	0	1
Health and Safety Engineer	1	0	1
Drafting	2	0	2
Welding	31	1	32
Construction	106	26	132
Construction Laborers	90	22	112
Construction Managers	1	0	1
Front-Line Supervisors	4	4	8
Painters, Construction, Maintenance	11	0	11
Truck Drivers	144	25	169
Heavy	128	21	149
Light	16	4	20
Industrial	14	0	14
Mechanics	18	0	18
Automotive Service Mechanics	8	0	8
Bus and Truck Mechanics	10	0	10
IT	15	2	17
Computer Support Specialists	6	1	7
Computer User Support Specialists	5	0	5
Network and Computer Systems Administrators	4	1	5
Machinist	3	0	3
Nursing	21	1	22
Registered Nurse	16	1	17
Licensed Practical Nurse	5	0	5

Table 42 compares the workforce needs (jobs posted in 2015) with the number of students enrolled in various programs (ATC and CTE) to determine what gaps, if any, exist.¹⁵ There is a gap between the number of postings and the workforce that is being trained for most of the positions. However, more welders are being trained than welding positions that are available. Furthermore, many individuals are seeking IT training but there are few jobs to fill the supply. There is a growing workforce of individuals with IT skills that could be used to attract IT businesses to the area.

Table 42: Employment Needs and Available Workforce Gap Comparison

Job Title	2015 Job Postings	USU Eastern Enrollees	CWD Enrollees	Carbon CTE Enrollees	Emery CTE Enrollees	Difference ¹⁶
Teacher	60	55	0	0	0	5
Electrician	46	1	0	0	0	45
Electrical Engineer	6	4	0	0	0	2
Other Engineers	17	17	0	0	0	0
Other Electronics	13	3	0	0	0	10
Welding	32	25	28	25	79	-125
Construction	132	0	10	0	23	99
Heavy Equipment & Trucking	169	60	0	0	0	109
IT	17	17	96	438 ¹⁷	50	-584
Machinist	3	5	0	0	12	-14
Nursing	22	9	0	0	0	13

¹⁵ The difference assumes 100 percent retention in Carbon and Emery counties.

¹⁶ Difference = 2015 Job Postings – total enrollees from each institution

¹⁷ There are 438 students enrolled in Information Technology, with accumulative course enrollment of 581; therefore, each Information Technology student enrolled in 1.3 Information Technology courses. Overall, the average CTE student enrolled in 2.67 CTE courses.

Appendices

Appendix A: Utah Demographic Fact Sheet (Source: Kem C. Gardner Policy Institute)
Appendix B: Carbon and Emery County Economic Snapshots (Source: Zions Bank)
Appendix C: Carbon County Economic Profile, 2015 (Source: EDCUtah)
Appendix D: Southeast Utah Local Insights Newsletter – Summer 2015 (Source: Department of Workforce Services)
Appendix E: 2016 Economic Report to the Governor (Source: Utah Economic Council)
Appendix F: GOMB Employment Projections (Source: GOMB)
Appendix G: USU Eastern – Enrollment by Industry (Source: USU Eastern; ZPFI)
Appendix H: Utah College of Applied Technology – Completion Rates (Source: Utah College of Applied Technology)
Appendix I: Accelerant Flyer
Appendix J: Base Metals and Mining Industry Outlook, 2016 (Source: Mining Global)
Appendix K: Mine 2015: The Gloves are Off (Source: PWC)
Appendix L: Utah State Energy Profiles (Source: U.S. Energy Information Administration)

Exhibit B

***State of Utah v. EPA*, Consolidated Case
Nos. 16-9541, 16-9542, 16-9543, 16-9545**

**Excerpts from EPA's Response to Comments
for the Federal Register Notice for Air
Quality State Implementation Plans;
Approvals and Promulgations: Utah;
Revisions to Regional Haze State
Implementation Plan; Federal
Implementation Plan for Regional Haze;
Partial Approval and Partial Disapproval
(Docket No. EPA-R08-OAR-2015-0463)
(June 1, 2016)**

**Response to Comments for the Federal Register Notice for
Air Quality State Implementation Plans; Approvals and Promulgations: Utah; Revisions to
Regional Haze State Implementation Plan; Federal Implementation Plan for Regional
Haze; Partial Approval and Partial Disapproval**

Docket No. EPA-R08-OAR-2015-0463

June 1, 2016

*This Response to Comment Document was finalized on June 1, 2016. As shown in the “redline/strikeout” version of this document in the docket for this action, the Agency made non-substantive and formatting edits on June 9, 2016.

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List of Public Comments

Docket ID Number EPA-R08-OAR- 2015-0463-xxxx	Commenter Name/Affiliation
-0031	Citizen Commenter
-0032	Anonymous Commenter
-0033	Anonymous Commenter
-0034	Anonymous Commenter
-0035	Anonymous Commenter
-0036	Anonymous Commenter
-0037	Citizen Commenter
-0038	Anonymous Commenter
-0039	Emery County Public Lands Administrator
-0040	Anonymous Commenter
-0041	Citizen Commenter
-0042	Anonymous Commenter
-0043	Citizen Commenter
-0044	Anonymous Commenter
-0045	Anonymous Commenter
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-0063	Emery County Commissioner
-0064	Citizen Commenter
-0065	Citizen Commenter

-0066	Anonymous Commenter
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-0098	Anonymous Commenter
-0099	Anonymous Commenter
-0100	Mass Mailer Sample, National Parks Conservation Association (NPCA)
-0101	Mass Mailer Sample, Sierra Club
-0102	Mass Mailer Sample, Healthy Environment Alliance of Utah (HEAL Utah)
-0103	Anonymous Commenter
-0104	Anonymous Commenter
-0105	Anonymous Commenter

-0106	Anonymous Commenter
-0107	Citizen Commenter
-0108	Anonymous Commenter
-0109	Anonymous Commenter
-0110	Anonymous Commenter
-0111	Anonymous Commenter
-0112	Public Hearing Statements
-0113	Public Hearing Statements
-0114	Sevier Citizens for Clean Air and Water (SCCAW) Hearing Statement
-0115	Anonymous Commenter
-0116	Anonymous Commenter
-0117	Anonymous Commenter
-0118	Early Mass Mailer Sample - Sierra Club
-0119	Anonymous Commenter
-0120	Anonymous Commenter
-0121	Citizen Commenter
-0122	Anonymous Commenter
-0123	Citizen Commenter
-0124	Retired National Park Service Manager
-0125	Anonymous Commenter
-0126	Anonymous Commenter
-0127	Anonymous Commenter
-0128	Citizen Commenter
-0129	Citizen Commenter (repeat of -0121)
-0130	Utah Citizens Advocating Renewable Energy (UCARE)
-0131	Citizen Commenter
-0132	Citizen Commenter
-0133	No document for this number
-0134	Anonymous Commenter
-0135	Anonymous Commenter
-0136	Utah Physicians for a Healthy Environment (UPHE)
-0137	Citizen Commenter
-0138	Citizen Commenter
-0139	Citizen Commenter
-0140	Citizen Commenter (repeat of -0139)
-0141	Citizen Commenter
-0142	Citizen Commenter
-0143	Citizen Commenter
-0144	Citizen Commenter (Sierra Club mass mailer, comment submitted via Regs.gov)

-0145	Citizen Commenter
-0146	Anonymous Commenter
-0147	Citizen Commenter
-0148	Citizen Commenter (Sierra Club mass mailer, comment submitted via Regs.gov, repeat of -0144)
-0149	Anonymous Commenter
-0150	Citizen Commenter
-0151	Anonymous Commenter
-0152	Carbon County Board of Commissioners
-0153	NPS Regional Director
-0154	National Park Service (NPS)
-0155	Edison Electric Institute
-0156	Colorado Conservation Organizations
-0157	Conservation Organizations, Vicki Stamper Report
-0158	Conservation Organizations, Dr. Gray Report
-0159	Utah Division of Public Utilities
-0160	Utah Department of Air Quality (UDAQ)
-0161	Wasatch Clean Air Coalition
-0162	PacifiCorp
-0163	Utah Associated Municipal Power Systems (UAMPS)
-0164	Citizen Commenter
-0165	Utah Mining Association (UMA)
-0166	Utah Citizens Advocating Renewable Energy (UCARE)
-0167	Conservation Organizations Cover Letter and Exhibits (Conserv Orgs)
-0168	Utility Air Regulatory Group (UARG)
-0169	PacifiCorp, corrected
-0170	Sierra Club, early comments
-0171	Citizen Commenter
-0172	Utah Physicians for Healthy Environment (UPHE) Part 1
-0173	UPHE, Part 2
-0174	Mass Mailer, Distinct Submissions, Sierra Club
-0175	Protect our Winters (POW)
-0176	Colorado Organizations
-0177	Mass Mailer, Industry
-0178	Mass Mailer, Coal Company Employees
-0179	UCARE, Second Submittal

the same. Similarly, the annual emission limit for the Dry Fork plant in Wyoming of 0.05 lb/MMBtu, compares very favorable to that set by EPA for Utah BART EGUs when taking into consider the much longer averaging period (i.e., annual vs. 30 days). That is, if the annual limit for Dry Creek were instead expressed on a 30-day averaging period, it would be necessarily higher and likely close to the 0.07 lb/MMBtu limit set by EPA.

Comment: [NPS Tech, p. 2] Of 1,222 plants, EPA Clean Air Markets (CAM) data for 2014 rank the Hunter facility #27 for NO_x at 11,595 tons. On an emission per unit of electrical output basis, Hunter ranked #188 worst for SO₂ and #197 worst for NO_x. Hunter also ranked #273 for emissions of CO₂ per unit of electricity produced.

Response: Comment noted.

Comment: [NPS Tech, p. 2] Of 1,222 plants, CAM data for 2014 rank the Huntington facility #72 for NO_x at 6,864 tons. On an emission per unit of electrical output basis, Huntington ranked #233 worst for SO₂ and #235 worst for NO_x. Huntington also ranked #309 for emissions of CO₂ per unit of electricity produced.

Response: Comment noted.

Comment: [Conserv Orgs, p. 18] SCR Constitutes BART for NO_x Emissions From Hunter Units 1 and 2 and Huntington Units 1 and 2 The Conservation Organizations support EPA's co-proposal finding that SCR constitutes BART for NO_x emissions from Hunter Units 1 and 2 and Huntington Units 1 and 2. Not only does EPA's five-factor BART analysis support SCR as BART—predicting some of the most significant visibility improvements at some of the lowest costs estimated across the Regional Haze Program—but the Conservation Organizations' own analyses validate EPA's.

Response: Comment noted.

5. General

a. Economic and Employment Concerns

Comment: [Carbon County, pp. 1 and 2] Carbon County is most concerned that, based on testimony from the Navajo tribe with a population of 166,826, how the loss of nearly 1,000 jobs between the plant and the mine would be too great of an impact to the tribe. Yet the loss of 1,260 direct and 1,850 indirect jobs between the mines and power plants and our supporting businesses in the Carbon/Emery County area with a combined population of 31,737 somehow does not measure up to a major economic impact to the area and our citizens? Why has no testimony been taken on the impacts to our area? How can EPA's conclusion, given the facts of this action, not be interpreted as Federal discrimination?

Response: It is not EPA's intention to endanger the economic viability of the PacifiCorp BART units or to place an undue burden on PacifiCorp's customers in making our final FIP determinations. However, neither the CAA nor the RHR provide for consideration of the affordability of controls, ratepayer impacts or potential job losses as part of a BART determination analysis. Rather, they require consideration of “the costs of compliance, the energy and non-air quality environmental impacts of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.”⁵⁶⁰

It is not clear which action the commenter is referring to in discussing testimony from the Navajo Nation. EPA has recently promulgated two source-specific FIPs to implement the RHR for sources on Navajo Nation – one for Four Corners Power Plant⁵⁶¹ and one for Navajo Generating Station.⁵⁶² The legal and policy context for those actions differed significantly from the instant case. In particular, in promulgating FIPs in Indian Country, EPA was acting in part, under the Tribal Authority Rule,⁵⁶³ which provides additional flexibility not otherwise available under the CAA and RHR.⁵⁶⁴ In addition, in undertaking the Four Corners Power Plant and Navajo Generating Station actions, EPA engaged in consultation with tribes and tribal authorities, consistent with the federal trust responsibility to Indian tribes, Executive Order 13175: Consultation and Coordination With Indian Tribal Governments, and the *EPA Policy on Consultation and Coordination with Indian Tribes* (May 5, 2011).⁵⁶⁵ As part of that consultation, EPA undertook certain economic analyses to assess potential rate impacts to the Navajo Nation and other affected tribes.⁵⁶⁶ No such potential impacts to tribes have been identified in the current case.

The commenter appears to misunderstand that an analysis of “non-air quality environmental impacts” must include economic effects. In fact, the plain language of the statute, as well as the RHR, makes clear that the economic effects factor is limited to non-air quality environmental impacts.⁵⁶⁷ The BART Guidelines note that examples of such impacts would include “solid or hazardous waste generation and discharges of polluted water from a control device.”⁵⁶⁸ Additionally, the BART Guidelines do allow for (but do not require) the consideration of “significant economic disruption or unemployment” as part of “energy impacts.” Specifically, the Guidelines provide that:

⁵⁶⁰ CAA section 169A(g)(2), 42 U.S.C. 7491(g)(2); 40 CFR 51.308(e)(1)(ii)(A).

⁵⁶¹ 77 FR 51620.

⁵⁶² 79 FR 46514.

⁵⁶³ 40 CFR part 49

⁵⁶⁴ See 79 FR 46517 – 46518.

⁵⁶⁵ Available at: <https://www.epa.gov/sites/production/files/2013-08/documents/cons-and-coord-with-indian-tribes-policy.pdf>

⁵⁶⁶ See, e.g. 77 FR 51625 – 51626, 79 FR 46548-46549

⁵⁶⁷ Id.

⁵⁶⁸ BART Guidelines section IV.D.4.h

* * * the energy impacts analysis may consider * * * whether a given alternative would result in significant economic disruption or unemployment. For example, where two options are equally cost effective and achieve equivalent or similar emissions reductions, one option may be preferred if the other alternative results in significant disruption or unemployment.⁵⁶⁹

The Guidelines also allow for consideration of “affordability” as part of the “costs of compliance” under certain circumstances:

1. Even if the control technology is cost effective, there may be cases where the installation of controls would affect the viability of continued plant operations.
2. There may be unusual circumstances that justify taking into consideration the conditions of the plant and the economic effects of requiring the use of a given control technology. These effects would include effects on product prices, the market share, and profitability of the source. Where there are such unusual circumstances that are judged to affect plant operations, you may take into consideration the conditions of the plant and the economic effects of requiring the use of a control technology. Where these effects are judged to have a severe impact on plant operations you may consider them in the selection process, but you may wish to provide an economic analysis that demonstrates, in sufficient detail for public review, the specific economic effects, parameters, and reasoning.⁵⁷⁰

Thus, only under “unusual circumstances” where a potential control option is expected to have a “severe impact on plant operations” or “result in significant economic disruption or unemployment” can we consider economic effects as part of a BART determination. In this case, we lack evidence to support the assertions that our proposed FIP would result in significant rate increases, jeopardize the plant's operations, or result in any other economic effects. In the absence of such evidence, commenter's assertions regarding job losses are speculative, and we cannot consider them as part of our BART determination.

Comment: [Carbon County, p. 2] We see this proposed rule as a way to control lands around Monuments, National Parks Wilderness areas or any area deemed necessary by the EPA or the governing Administration with the purpose of reducing the productivity of goods or resources which devalues the area creating catastrophic economic impacts to area residents and the local government.

Response: The commenter has made an unsubstantiated claim regarding implementation of the regional haze program. In accordance with section 169A of the CAA, EPA, in consultation with

⁵⁶⁹ Id. section IV.E.2.

⁵⁷⁰ Id. section IV.E.3.

Comment: [Docket ID-0165] The Utah Mining Association (UMA) is a 101-year old, 120-member, non-profit, non-partisan trade association representing the interests of the mining industry in Utah. UMA members are actively involved in exploration and mining operations on public and private lands throughout the state. Our diverse membership includes every facet of the mining industry, including geology, exploration, mining, engineering, power generation, equipment manufacturing, legal and technical services, and sales of equipment and supplies. As significant energy ratepayers, our members are directly affected by the EPA's proposal.

Response: Comment noted.

Comment: [Transcript pp. 119-120] One commenter noted that the proposed FIP will require Rocky Mountain Power to spend nearly 700 million dollars. Rocky Mountain Power has a customer base of approximately 83,000 households. The FIP, if implemented, will cost each of these households \$8,434. This hurts every citizen of that system, especially the low and fixed income families. The FIP would provide less than one deciview improvement on average which is not noticeable to the human eye. The federal government would be forcing the rate payers of Utah to pay a great cost for something that they cannot even see.

Response: First, we disagree that our FIP will require Rocky Mountain Power to spend \$700 million dollars. EPA's revised estimate of the total capital costs for the FIP is \$517 million dollars. Second, EPA's evaluation of capital and annual expenses associated with implementation of the FIP shows such expenses to be justified by the degree of improvement in visibility in relationship to the cost of implementation. We note that for electric utilities, while EPA has not customarily analyzed or considered ratepayer impacts in BART determinations,⁵⁷⁶ it is readily apparent that the household cost impacts suggested by the commenter are significantly overstated. Based on other economic analyses we have reviewed,⁵⁷⁷ residential customers are more likely to experience rate increases in the range of 5-10% due to installation of SCR controls required by the FIP. While these projected rate increases are not trivial, they are comparable to average historical rate increases for Rocky Mountain Power (aka PacifiCorp), Utah, and U.S. ratepayers.⁵⁷⁸

⁵⁷⁶ Exceptions include EPA's Regional Haze FIP for Hawaii, where we analyzed potential rate impacts due to the unique energy situation in Hawaii, (77 FR 61478, 61488 (Oct. 9, 2012)); EPA's BART FIP for Four Corners Power Plant, where we examined potential rate impacts as part of tribal consultation, (77 FR 51620, 51625-51626 (Aug. 24, 2012)); and EPA's BART FIP for Apache Generating Station to understand the rate impacts on Arizona Electric Power Cooperative as a small entity, (77FR 72512 (Dec. 5, 2012)).

⁵⁷⁷ Apache Plant: Report on SCR Incremental Cost Assessment, November 9, 2012 [original EPA docket ID EPA-R09-OAR-2012-0021-0211 and also included in the docket for this action] and The Cost of Clean Air, Effects of Air Pollution Controls on Electric Rates in North Dakota and Minnesota, Paul Chernick, November 7, 2011 [original EPA docket ID EPA-R08-OAR-2010-0406-0213, Attachment 5 and also included in the docket for this action.]

⁵⁷⁸ Energy Information Administration (EIA) State Historical Tables for 2014, Released: February 19, 2015. Average Price by State by Provider, 1990-2014. <http://www.eia.gov/electricity/data.cfm#sales>, last accessed June 1, 2016.